A GENERATIVE PHONOLOGY OF AZERBAIJANI

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To my Mother

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This study, consisting of five chapters and a summary, presents a

generative phonology of the Tabriz dialect of Azerbaijani. The first

chapter sketches Azerbaijani among Turkic languages, and briefly refers

to the literary dialect of the Northern Azerbaijan, styles of speech,

and the Tabriz dialect. The second chapter examines six previous works

on Azerbaijani phonology and finds a reanalysis of the [+ high] stops

and affricates necessary. The third chapter presents an argument for

positing a pair of velar stops and deriving the palatal stops from

them by rule. This chapter also briefly argues for one underlying seg-

ment inventory for all Azerbaijani dialects. Consequently, it argues

that despite phonetic difference the dental affricates and alveopalatal

retroflex affricates in some dialects of Azerbaijani (as in the Tabriz

dialect), and the alveopalatal affricates and palatal stops in some

other dialects (as in the Baku dialect) come from the same underlying

segments, i.e., from the alveopalatal affricates and velar stops. The

fourth chapter contains the majority of the phonological rules in this

study. Chapters two, three and five, too, contain some of the rules.

Some of the rules are apparently formulated for the first time, and those that appear also in traditional analyses, are formulated with regard to the general principles of generative phonology. The fifth chapter viewing nativization as the inconspicuous occurrence of a loanword in a speech style of a borrowing language, sketches nativization in Azerbaijani. Here it is suggested that, in nativization, in addition to the general rules of Azerbaijani phonology and the rules of nativization, which like the general rules apply to the underlying representations, there are also the rules that replace the unfamiliar foreign segments with native approximations in the lexical entries. It is observed that there is almost always a direct relationship between the number of the rules and the degree of nativization. Finally, it is suggested that nativization affects also the borrowing language.

CHAPTER I

THE POSITION OF AZERBAIJANI AMONG TURKIC LANGUAGES

Introduction

1.1. Azerbaijan is a geographical area occupying a province of
Persia to the south and a republic of the Soviet Union to the north of
the Aras river. In this dissertation we are concerned with the language
of Azerbaijan, specifically its phonology.

1.2. Azerbaijani is a new name for the Turkic language spoken in
Azerbaijan and nearby lands[1] since centuries ago. In Southern Azerbaijan
it is largely a spoken language and occasionally the language of poetry,
whereas in Northern Azerbaijan it is the official language of the repub-
lic. Despite the fact that for centuries it has been called Türki in
Persia and Azerbaijan, the name Azerbaijani, particularly in linguistic
discussions is preferable because Turki, formally referring to the
Eastern Turkic, is ambiguous. Another ambiguous name used for Azerbai-
jani is Azeri which is the name of an Iranian language replaced by our
Turkic Azerbaijani. Other names used for Azerbaijani have been Türk dili
'the Turkic language', Türkchä 'Turkic', Azerbaijan Türkchäsi 'Azerbai-
jani Turkish', Azeri Türkchäsi 'Azeri Turkish', and even 'the Caucasian
Tatar Language' (Dämirchizadä' 1972:3).

1.3. In this study we shall use the name Azerbaijani, for however
else it is named 'for centuries this language has been the language of
the heart and the mould of the thought and feeling of [the people of
Azerbaijan]' (Färzanä 1965:2), and it remains 'the language of the heart,

1

street, and home for the people of Azerbaijan' (Kārāng 1961: Introduction).[2]

1.4. Azerbaijani is spoken by more than seven million people in Southern and Northern Azerbaijan. Smaller groups, too, in the Middle and Near East speak dialects of Azerbaijani. As for its distribution in Persia, outside Azerbaijan, 'Turkic minorities speaking an Āzarb dialect [are] found practically in all major cities' (Menges 1951:278).

1.5. An attempt to properly locate Azerbaijani in time and place among the Turkic languages would require an independent study. But in a brief introduction of the kind presented here it may be said that when Bulgar-Chuvash and Yakut, the Turkic languages of the Northwestern and Northeastern extremities of the Turkic world, respectively, are excluded (because they have early branched out and stayed away from the general confluence shared by the rest of the Turkic languages), we may start with the assumption that prior to about the ninth century the Turkic world shared an almost common Turkic of which the Yenisei and Orkhon inscriptions of the seventh to the eighth centuries (Jensen 1969:422) are later records. We may call this Old Turkic.

1.6. The period of the ninth to the thirteenth centuries is the time when within the common Old Turkic there developed characteristics which justify major subdivisions, i.e., we find divisions like Southeastern or Karluk, Northwestern or Kipchak, and Central or Oghuz. The Oghuz group has a really central position because it contains characteristics from both the Southeastern and the Northwestern, i.e., the Karluk group and the Kipchak Turkic.

1.7. Comprehensive systems of classifications of Turkic languages have been worked out by renowned Turkologists. In two of the broadest

of these classifications Azerbaijani can be seen as (1) an Eastern Turkic, or (2) a Southwestern Turkic dialect.

1.8. (1) Azerbaijani is an Eastern Turkic dialect if Turkic langrages are divided into a Western group comprising ancient Volga Bulgar and modern Chuvash, and anEastern group embracing all other Turkic languages. This classification proposed by Samoylovich and amended by Räsänen (Krader 1966:33) is based on a few simple sound features.

1.9. Whereas Western Turkic languages have final -r (e.g., Bulgar [taxar] 'nine'), Eastern Turkic languages have final -z (e.g., Oghuz [toguz] 'nine'). The -z group is further divided on the basis of having intervocalic d (e.g., medieval Kirgiz and medieval Uygur [adak] 'foot') or y (e.g., medieval Kipchak, Oghuz [ajak] 'foot'). And the y languages are divided into those with prevocalic g- (e.g., Kazan Tatar, Kazakh [Kalgan] 'remaining') and those without this prevocalic g- (e.g., Oghuz [Kalan] 'remaining') (Krader 1966:33).

1.10. (2) Azerbaijani is a Southwestern Turkic language if classification is based on geographical location and the genetic ties which relate each modern Turkic language to a corresponding classical Turkic language. According to this classification, as already hinted (when two minor categories of Bulgar and Chuvash at the extreme West, and Yakut at the extreme Northeast of the Turkic world are excluded because of their more archaic characteristics), most of the Turkic languages fall into four major categories: (a) Southwestern or Oghuz, (b) Southeastern or Chagatay (medieval Uygur), (c) Northwestern (medieval Kipchak), (d) Northeastern (Krader 1966:35-49; Dilâçar 1964:28-117; Halasi-Kun 1962: 13-18).

1.11. Southwestern Oghuz Turkic, which came to the Near and

Middle East during the eleventh and twelfth centuries, itself can be viewed in two groups: the western and the eastern. The western dialect of the Southwestern Oghuz Turkic was spoken in Osmanli territory, i.e., west Anatolia, and the eastern dialect of the Southwestern Oghuz Turkic was spoken in east Anatolia and Azerbaijan. It is the latter dialect which, exposed to the influence of non-Oghuz Turkic dialects, particularly Northern and Eastern Turkic languages, and especially the Kipchak Turkic and some Mongolian elements, can be considered the earliest stage of Azerbaijani (Ergin 1958; Berengian 1965:VIII-IX). And it is on the basis of this mixed origin that Azerbaijani has acquired a central position among modern Turkic languages.

1.12. Apart from the heritage of Old Turkic literature which Azerbaijani shares with other Turkic languages, and in addition to its classics 'Azerbaijani possesses one of the richest among the greatest folkloric literatures whose influence can clearly be seen among the neighboring peoples' (Färzanä 1965:2)[3].

1.13. In this study we are concerned with the pronunciation of one Azerbaijani dialect, i.e., the Tabriz dialect, to be more specific the pronunciation of the present writer. Tabriz is the largest city in Southern Azerbaijan with a population about 465,000. In the process of describing Tabriz speech there may be references to other dialects of Azerbaijani, especially the literary dialect of Azerbaijani in Northern Azerbaijan. There may also be references to the styles of pronunciation, such as 'formal', 'informal' and'normal'.

1.14. The literary pronunciation of Azerbaijani in Northern Azerbaijan is derived from four main sources discussed in the paragraphs (a) through (d):

(a) One of the sources determining the literary pronunciation is
the pronunciation of Azerbaijani in different region centers, such as
Nakhchïvan, Shusha, Gänjä, Shäki, Shamakhï, Baku, Länkäran.

(b) Another source employed in the formation of the literary pro-
nunciation is the pronunciation developed in the capital, i.e., Baku as
a result of the interaction among different dialects of Azerbaijani.

(c) A third source influencing the formation of the literary pro-
nunciation is the contemporary written Azerbaijani which, except for the
changes of pronunciation predictable by rules, is taken as a model for
the literary pronunciation of Azerbaijani. E.g., the written form of
the suffixes, the great majority of the monosyllabic words, and the
early nativized loans are pronounced as they are written. It seems pos-
sible to infer from Dämirchizadä's (1972:180-4) observation that in the
literary pronunciation the word is pronounced as written except when a
segment or some segments have a different realization owing to the rules
governing the literary pronunciation, e.g., whereas the words äl [æl] .
'hand', söz [söz] 'word', qayda [gajda] </ga͞ida /< Arabic qā̧ida 'rule'
etc. are pronounced as written, the words otaq [otax] 'room', murad [murat]
</mura͞d/< Arabic murā͞d 'aim', etc., are pronounced with their final
segment having undergone the rule of devoicing ([murat]), and spirantization
and devoicing ([otax]) which operate in many Azerbaijani dialects including
the literary pronunciation.

(d) The fourth source of the derivation of the literary pronuncia-
tion is the pronunciation of the nonnativized or less nativized loan-
words, e.g., the initial unstressed o in the words sovet [savet] 'coun-
cil' and kolxoz [kalxoz] 'collective farm' occur in the literary pronun-
ciation of Northern Azerbaijan as [a] as in Russian; and the k in a
series of loans is realized in the literary pronunciation as a velar [k],
as it is in the source language, here Russian, e.g., leksika [leksika]

'vocabulary', <u>fonetika</u> [fanetikaˌ phonetics', etc. Besides, the
written form of some loans found in Azerbaijani have a partially nativ-
ized spelling pronunciation, e.g., <u>müasir</u> [muʔāsir]</mu/ʔāsir/ Arabic
<u>muʕāṣir</u> 'contemporary', <u>ävam</u> 'illiterate' (also <u>avam</u> [avam])</æˉvam/
<Arabic <u>ʕawām</u>.

    1.15. As for the different styles of pronunciation, it is conve-
nient to adopt R. I. Avanesov's (Dämirchizadä 1972:174-5) classification
for the literary pronunciation of Russian. According to this classifi-
cation, pronunciation can be in

    (a) The Book style: comprising poetic, academic, and oratorial
styles.

    (b) The Conversational style: comprising serious and free styles.

    (c) The Popular Speech style: consisting mainly of 'careless
speech'.

    1.16. Dämirchizadä himself speaks of two styles, the 'full style',
and the 'free style'. By the 'full style' he intends 'the serious, for-
mal, correct, exact, persuasive, and effective style' (Dämirchizadä 1972:
177), and by the 'free style' he seems to mean a style with the charac-
teristics of both the 'conversational style' and the 'popular speech
style' of Avanesov's classification. Dämirchizadä, however, clarifies
that no conversation consists solely of one style (Dämirchizadä 1972:
175-80).

    1.17. While on the whole we agree with Dämirchizadä, it seems
that with regard to the number of the rules involved in their derivation,
some words (in whose derivation fewer rules have operated) belong to
the 'conversational style' and some words (in whose derivation more
rules have operated) belong to the 'Popular Speech style'. (See the

illustrative examples in 1.18 below.) Consequently it appears that a reinterpretation of Avanesov's classification can offer a more suitable classification of the styles of pronunciation for all Azerbaijani dialects, including the Tabriz dialect. Accordingly, the pronunciation of Azerbaijani dialects may roughly be classified into

(a) The formal style, where the phonetic form is identical with or minimally different from the underlying representation, e.g., [joɣurd] </joɣurd/ yoɣurd 'yogurt', [sāʔæt]</sāʔæt/<Arabic sāʕat[4] 'time, timepiece', [rāhæt]</rāhæt/<Arabic rāḥat 'comfortable'.

(b) The informal style, where the phonetic form is almost always maximally different from the underlying representation, e.g., [jout]< /joɣurd/ yoɣurd 'yogurt', [sahat][5]</sāʔæt/<Arabic sāʕat 'time, time-piece', [raat] /rāhæt/<Arabic rāḥat 'comfortable'.

(c) The normal style, where the difference between the phonetic form and the underlying representation is neither minimal nor maximal, e.g., [jourt]</joɣurd/ yoɣurd 'yogurt', [saat]</sāʔæt/<Arabic sāʕat 'time, timepiece', [rahat]</rāhæt/ Arabic rāḥat 'comfortable'.

1.18. As already mentioned (see 1.17 above), a triple classification is justified for the convenience it affords to the description of a pronunciation style in terms of the number of the phonological rules involved in a particular derivation. E.g., the pronunciation of yoɣurd 'yogurt' in the three styles of pronunciation may have the following derivations:

	/joɣurd/	/joɣurd/	/joɣurd/
g→ ɡ/v-	ɡ		
g→ ∅/v-v		∅	∅
d→ t/-#	t	t	t
r→ ∅/-d			∅
	[joɡurt]	[jourt]	[jout]

Often all the three styles have the same pronunciation, e.g., [üz] $<$/üz/ üz 'face', [gæ læm]$<$/gæ læm/$<$Arabic qalam 'pen', etc. Or the pronunciation is identical at least for two of the three styles, e.g., while the word for 'heart' üräk is [ürǽš]$<$/ürǽk/ in formal style, it is [ürǽx] in both the normal and informal styles.

1.19. As for the Tabriz dialect, it is 'understood all over Persian Azerbaijan and in most of Soviet Azerbaijan' (Fraenkel 1961:6). The Tabriz dialect is regarded as the literary dialect of Southern Azerbaijan. According to Dilâçar (1950:76) in Persian Azerbaijan 'the main literary dialect is the dialect of Tabriz.' Concerning Azerbaijani Dilâçar (1964:114) also observes that in Persian Azerbaijan 'the main written dialect is that of Tabriz.'

1.20. Tabriz speech, however, has some peculiarities which render it somewhat different from the literary dialect of Northern Azerbaijan with its eclectic regularities. One readily noticeable difference between the pronunciation of the Tabriz dialect and that of the Northern literary dialect is in the realization of the alveopalatal affricates /č ǰ/ and the palatal stops [ḱ ǵ] (derived from the velar stops /k g/ by the rule of the realization of the velar stops (RVS) (3.2.11)). Whereas in the Northern literary dialect the underlying alveopalatal affricates and the palatal stops appear at the phonetic level, i.e., as [č ǰ] and [ḱ ǵ], in the Tabriz dialect the /č ǰ/ and [ḱ ǵ] surface as the dental affricates [c ʒ] and the alveopalatal retroflex affricates [ĉ̣ ʒ̣̂].

With regard to the peculiarities of Tabriz speech, Dilâçar (1964: 114-5) observes: 'In many localities especially in Maragha, Azerbaijani can be found with neat and old features.' The important point under-

lying this observation is the fact that in Tabriz speech there are in-
stances of the partial observance or the nonobservance of vowel harmony[6],
e.g., the final vowel of a word need not harmonize with the vowels of the
preceding syllables in backness or roundness, e.g., [jazdi] 'wrote',
[süri] 'flock', [ælün] 'thy hand' which are [jazdɨ], [sürü], and [ælin]
in literary style; similarly the infinitive suffix [max], the first per-
son plural marker of the imperative mood [ax], the future marker [a cax],
and the comparative marker [rax] will have back vowels even if the stems
have front vowels. The rule of synharmony, too, which requires the use
of back vowels with the velar consonants is not always observed, e.g.,
[ḱor] 'blind', [tiḱan] 'thorn', etc. With regard to the degree of
adherence to the rule of vowel harmony, Shiräliyev (1967:58) places
Tabriz speech at the end of a list of Azerbaijani dialects (including
the Baku dialect) with frequent breaches of the rule of harmony.

1.21. A glance at the rarely published Southern Azerbaijani lit-
erature of any value suffices to indicate that despite the claim to the
contrary the Tabriz dialect is not the literary dialect of Southern Azer-
baijan. This fact is evident from the absence of the already mentioned
harmony breaches characteristic of the Tabriz dialect in the literary
language. In other words, in Southern Azerbaijan, too, for serious lit-
erature there is a literary dialect much similar to or identical with
the literary dialect employed in Northern Azerbaijan. In this dialect
all the vowel harmony breaches are avoided.

1.22. In the following chapters we are concerned with the phonol-
ogy of the spoken urban Tabriz dialect of Azerbaijani. Chapter two dis-
cusses the previous words on Azerbaijani phonology examined by the author;
chapter three posits the underlying segments of Azerbaijani; chapter four

presents the phonological rules involved in the derivation of the pro-
nunciation of Tabriz speech; and chapter five gives an account of na-
tivization of loan words in Azerbaijani.

Notes

[1] The fact that the Azerbaijani language has not been limited to
Azerbaijan can be seen through many centuries since its formation as a
literary dialect in the fourteenth century. Between the fourteenth and
sixteenth centuries Azerbaijani was one of the three major literary
languages of the Turkic world, the two others being Osmanli (first only
negligibly different from Azerbaijani) and Chaghatay (see Berengian 1965:
3-5).
   Concerning its currency outside Azerbaijan we may note that the
status of Azerbaijani as a lingua franca in Central Asia and Caucasia
repeatedly has been mentioned by men like Lermontov, Marlinsky, Abovyan,
Lazarev, and Budagov. Lermontov has even compared the convenience af-
forded by Azerbaijani to people traveling in the Caucasus and Central
Asia to that of French to the travelers in Europe. And as an example of
its popularity among different peoples, it may be pointed out that accord-
ing to recent research, between the sixteenth and eighteenth centuries
thirty-five Armenian fork poet-musicians composed and performed in Azer-
baijani (See Dämirchizadä 1972:6).

[2] The implication is that in Southern Azerbaijan today Azerbai-
jani is largely a spoken language, though once it was also a language of
publications. 'Eight Turkic [i.e., Azerbaijani H. S.] newspapers were
published during the first stage of Constitutional Period [1906-1911] in
Tabriz and Urumiyya' (Berengian 1965:38).

[3] Professor Tibor Halasi-Kun (1962:18) of Columbia University says:
'Even today the Azeri [i.e., Azerbaijani H. S.] Akhondzade is considered
the greatest playwright both of the Turkic world and of the Near and
Middle East.'

[4] The spelling forms for almost all the Arabic and Persian loans,
in Southern Azerbaijan, are identical with that in the source language.

[5] The informal [sahat] has not undergone the maximum number of the
rules in comparison with normal [saat] (See p.16 for their derivation).

[6] The partial observance or nonobservance of vowel harmony in
Tabriz speech seems to have historical reasons. E.g., the word for 'rice'
is [düji] in Tabriz speech, and [tuki] in early Turkic (Emre 1949:38).
The difference between the Tabriz [düji] and the literary Azerbaijani
[düjü] (Azizbäkov 1965:142), thus, seems to be in the further development
of vowel harmony in the literary style and the lingering of archaism in
Tabriz speech.

Similarly, the harmony in the Tabriz [æ lün] 'thy hand' (corresponding to the literary pronunciation [æ lin]) may not be considered as broken because this form has kept more of the earlier [æ lün] (Ergin 1963:126). Using standard Turkish orthography, Ergin transliterates the word for 'thy hand' الرك (Kitāb-i Dādām Gorgud... Dresden Copy p. 84) as elüñ where the e is in fact [æ] in Azerbaijani (see Ergin 1958:402). There are Turkish dialects, e.g., Anatolian dialects, where the orthographic e represents both the mid fromt [e] and the lower mid from [ɛ] (which corresponds to Azerbaijani [æ]). In these dialects [e] and [ɛ] contrast, e.g., el[ɛl] (Azerbaijani [æ i] äl) 'hand' and el[el] 'country'. (See Dilâçar 1950:60-61 and 1964:107)).

CHAPTER II

A REVIEW OF THE EXISTING TREATMENTS OF
AZERBAIJANI PHONOLOGY

2.1. Chapter two presents a brief review of six works on Azerbaijani
phonology. In each work we have been concerned mainly with what is related
to Azerbaijani phonological segments. This means that we have not reviewed
each work in its entirety. Consequently, the narrow scope of our interest
has made it impossible for us to refer to all the valuable contributions
of each work to Azerbaijani linguistics.

Except for one linguist (Shiräliyev) who views the sound system of
the majority of Azerbaijani dialects, and hence is not expected to focus on
a particular dialect, five out of the six linguists whose treatment of
Azerbaijani sound systems we examined are concerned with particular
dialects.

2.1.1. One linguist (Assaturian) seems to describe the Northern
literary dialect, with valuable references to Tabriz speech. Two linguists
(Dämirchizadä and Akhundov) describe the sound system of the Northern
literary dialect of Azerbaijani. Two linguists (Fraenkel and Färzanä)
describe the Tabriz dialect.

2.1.2. <u>Assaturian 1958</u>. This is a phonemic analysis presenting
the phonemes, their allophones, and distribution in consecutive sections
for Turkish followed by Azerbaijani. Turkish receives fuller treatment,
and the shorter treatment of Azerbaijani includes references to the Turkish
norms.

2.1.3. Assaturian's description of Azerbaijani phonemes generally accounts for Tabriz speech, as well, although his description of one segment does not correspond with that in Tabriz speech. He speaks of a voiceless postvelar stop in Azerbaijani. If 'postvelar' is to mean a point of articulation beyond the articulatory point for velar stop, i.e., a uvular stop, this does not seem to belong to the Tabriz dialect nor probably to other Azerbaijani dialects. We are not informed to which Azerbaijani speech area his informant belongs, though from note 9, page 36 it seems inferable that Assaturian's Azerbaijani informant comes from Southern Azerbaijan. It seems possible that what Assaturian describes as a voiceless postvelar stop is the same voiceless velar stop which, reportedly, is encountered in some Northern and Western dialects and speeches of Northern Azerbaijan. E.g., in Zagatala-Gakh speech, in the north, the voiceless palatal stop [k̇] is often replaced by the voiceless velar stop [k], e.g., [komak]</kömæk/ 'help', [inak]</inæk/ 'cow', etc.; and in Western dialects, the voiceless velar stop has been found before [ɨ] and [u] in a few words, e.g., [kɨš]</gɨš/ 'winter', [kuš]</guš/ 'bird' (Shiräliyev, 1967:75).

2.1.4. In view of the phonetic difference between the Tabriz dental and retroflex affricates [c ʒ ȷ̑ ǯ] and other Azerbaijani alveopalatal affricates and palatal stops [čǰkg], Assaturian's choice of /čǰkg/ is quite significant from our point of view. Concerning [ȷ̑ ǯ] he observes:

> The two phonemes /gʸ/ and /kʸ/ are so strongly
> palatalized and fronted with some speakers,
> especially in Tabriz, Ardabil and other areas
> in Iranian Azerbaijan, that they sound almost
> like /dǯ/ and /tč/ respectively (p. 36).

And concerning [c ʒ] he says:

> Those Azeri speakers who articulate the /kʸ/ and

/g^y/ phonemes as (tč) and (dj), instead of (čʸ)
and (jʸ) would use (c) and (dz) (p. 40).

2.1.5. In the section 'Distribution of phonemes' Assaturian gives
the useful explanation that in a word with a vowel sequence, there appears
an internal open juncture between the two vowels when the second is stressed,
as in [saat] 'time, timepiece.' Assaturian (1958:43) also observes that
'when two vowels occur together unstressed they are pronounced in close
juncture. Example, /teali/ 'elevation', where the first vowel forms a
syllable with the preceding consonant, while the second vowel on the other
hand forms a syllable by itself.' Here, too, what interests us is that
vowel sequences in Azerbaijani constitute two syllable sequences in contra-
distinction to a diphthong in whose underlying structure in Azerbaijani
the segments involved are a vowel and a nonsyllable segment, not two
vowels (see 2.3.6; 2.4.2; 2.4.4.2; 2.5.3.1; 2.6.3.5-6). Furthermore,
if our analysis is correct, the orthographic form <u>teali</u> (also in Moran,
1945:1233), which in formal style of pronunciation consists even phoneti-
cally of a cvcvcv sequence, does not contain a vowel sequence. The word
<u>teali</u> in phonetic form consists of a cvcvcv whose first intervocalic c
is a glottal stop which replaces the Arabic voiced pharyngeal fricative
in the Arabic word taʕalī. The presence of the glottal stop in the
partially nativized form [tæʔali] rises from a physiological need for a
connecting nonsyllabic segment between two vowels differing in backness
or height. Another instance of a replacement motivated by such necessity
can be seen in [duwa] Arabic duʕā 'prayer' where the inserted nonsyllabic
segment agrees in roundness with the preceding vowel. Similarly, the
front glide in [ismayɨl]<Arabic ismāʕīl Ishmael is a replacement.

2.1.6. It is rather difficult to agree with Assaturian's implica-
tion that there are initial consonant clusters in Azerbaijani. He gives

a few initial clusters, e.g., <u>dram</u> 'drama', <u>gram</u> 'gram', <u>spor</u> 'sport',
<u>sfenks</u> 'sphinx', <u>staž</u> 'apprenticeship', etc. for Turkish, and at the end
of the section for clusters he observes: 'the distribution of consonants
in Azeri Turkish represents the same pattern, and listing of it here would
be repetitious. Most of the examples cited for Osmanli Turkish occur
identically in Azeri' (Assaturian, 1958:49). To the present writer's
knowledge the fact is that any occurrence of initial clusters will be in
nonassimilated loans in the speech of those aware of the nonnative
origin of the word.

2.1.7. Concerning clusters, it should be pointed out that, although
medial clusters (usually of two and rarely of three consonants) do occur
in Azerbaijani, in popular Tabriz speech it is seldom the case that voicing
assimilation exists. Quite the contrary, even where orthography shows
voicing assimilation of consonants, in pronunciation dissimilation occurs,
e.g., <u>ista</u> [isdæ] 'Ask (for)!'.

2.1.8. Assaturian shows that in Turkish and Azerbaijani there are
three stress levels: primary, secondary, and weak. The difference between
weak and primary stress can be phonemic in monosyllabics, e.g., [gül]
'flower' vs. [gül] 'Smile!'. As to the position of stresses in poly-
syllabics, in native words, as Assaturian shows, the primary stress falls
on the last syllable, the weak on the syllable preceding the primary, and
the secondary stress, in words of more than three syllables, falls either
on the last syllable of the root, e.g., [algïšladïlar] 'they applauded'
(Dämirchizadä, 1972:160), or stays on the first syllable, e.g., [joldáš-
larïmïzi] 'our friends' (accusative). In Turkish, foreign and geographi-
cal names are stressed on the first syllable, e.g., <u>banka</u> 'bank', <u>posta</u>
'post', <u>Londra</u> 'London', <u>Sirkeci</u> 'an area in Istanbul'. But this is not

the case in Azerbaijani where foreign words are not exceptions to the stress rule, e.g., <u>tilifún</u> 'telephone', <u>Lä́ndàn</u> 'London', <u>Maralán</u> 'an area in Tabriz'.

2.1.9. As Assaturian observes, in compound words the last syllable bears the primary stress, e.g., <u>birčog</u> 'many.' Also, as he mentions, stress falls on the syllable preceding the question marker /mi/, whose presence is not necessary in normal and informal styles, though it is encountered in literary style, e.g., <u>Gördún(mü)</u>? 'did you see?'. We could add that there are other syllables, too, that behave like the question marker /mi/, e.g., the negation marker /ma/, and several others (see for a discussion of such syllables Dämirchizadä́, 1972:155-6). Finally, as Assaturian (1958:53) mentions, in reduplicate words both members receive primary stress on the final vowel, e.g., <u>tané</u> <u>tané</u> (<u>daná</u> <u>daná</u> in Tabriz) 'one by one'.

2.1.10. Assaturian observes that whereas vowel length is phonemic in Osmanli, it is not in Azerbaijani. Osmanli, roughly, is the Turkic during the 15th to early 20th centuries in Turkey. Today Turks of Turkey refer to their language as <u>Türkçe</u> 'Turkish' or <u>Türkçemiz</u> 'our Turkish' as opposed to <u>Azerice</u> 'Azeri', <u>Azeri Türkçesi</u> 'Azeri Turkish', <u>Azeri</u> 'Azerbaijani' etc.   In fact some of the long vowels are surface phonetic manifestations: [dōru] <u>dogru</u> 'right, correct,' etc., and some are non-assimilated, nonnative vowels, e.g., [fenā]<Arabic <u>fanā</u> 'dissolution', [ǰām]<Persian <u>ǰam</u> 'goblet.' Only when we compare the length in words like these with the ordinary native vowels as well as the shortened (i.e., nativized) vowels in nativized words can we find 'phonemic contrast,' e.g., [ǰām]<Persian <u>ǰam</u> 'goblet' vs. [ǰam] 'glass, pane.'[1]

2.2.1. <u>Fraenkel 1961</u>. Part V of Fraenkel's work, 'The phonemes'

(pp. 446-52), consists of (1) Azerbaijani vowel 'phonemes' in the vowel triangle, followed by short comments on vowel harmony, and allophonic variations, (2) the table of Azerbaijani consonants, followed by notes on the allophonic variations, and their distribution. Finally, he gives a distinctive feature analysis chart with Jakobsonian features.

(1) The vowels:

i	ü	y	u
e	ö		o
	æ	a	

2.2.2. Fraenkel (p. 446) gives a cryptic hint at vowel harmony: 'Normally either the low vowels æ a or the high vowels i ü y u harmonize in one of the two possibilities of vowel harmony existent in the language; other types are rare.' Then he refers to Azerbaijani vowels in the frame of (Daniel Jones's) cardinal vowel system.

Fraenkel's note on vowel harmony is rather too laconic to be directly understood. He presents Azerbaijani vowels in two groups: the low vowels /æ a/, and the high vowels /i ü y u/. (Not implausibly, he disregards the mid vowels /e ö o/ which as he observes (p. 447) do not occur in suffixes.) But it is not quite clear how /æ a/ harmonize in native Azerbaijani words. It is true that they are low vowels, but they differ more importantly in that one is a front, the other is a back vowel. This is an improbable mistake, hence Fraenkel's grouping of /æ a/ and /i ü y u/ must have another interpretation. Possibly, Fraenkel intended that /æ/ vs. /a/ and /i ü/ vs. /y u/ stand in a relationship, i.e., the low /æ/ harmonizes with the high /i ü/ all being front vowels, and the low /a/ harmonizes with the high /y u/ all being back vowels.

2.2.3. As for consonants, Fraenkel gives detailed phonetic information,

like the voicelessness of Azerbaijani stops initially, after consonants, and finally. But most importantly, from the viewpoint of our approach, Fraenkel gives the 'blade-palatal' č and ǰ (of <u>ch</u>ur<u>ch</u> and <u>judge</u>) rather than the dental c (of ha<u>ts</u> and a<u>dze</u>), as Azerbaijani affricate phonemes. Fraenkel's choice of /č/ and /ǰ/ rather than /c/ and /ʒ/, which are more expected because his informant is a Tabrizi speaker of Azerbaijani, is quite significant. Similarly, Fraenkel refers to dorso-palatal stops (i.e., /ḱ/ and /ǵ/ rather than the retroflex affricates, i.e., [ṕ] and [ḱ]), as Azerbaijani phonemes. These are in agreement with our generative interpretation to be presented in the following chapter.

2.2.4. In the section "Distribution," Fraenkel gives more phonetic information about Azerbaijani consonants. Some of these are phonologically important, e.g., the nonnativeness of the voiceless velar stops; the restriction of the palatal stops to syllable initial position; only non-initial occurrence of voiced velar fricative; the unstableness of /h/; and the realization of /v/ as [w] after /a/ and /o/.

2.2.5. There seems to be a contradictory view of the segment /r/, which is specified as [+voc, +cns, +strid. . .] (p. 452). According to Fraenkel himself (p. 450) /r/ is 'a flap with fricative allophones; thus in phonemic terms the norm or 'systematic phoneme' is the 'voiced flap' which is so realized intervocalically and initially, though initially the flap is in free variation with a voiced fricative allophone, and finally and before a voiceless consonant/r/ has a voiceless allophone resembling [ž]. It is in its devoiced allophonic occurrences, finally and preconsonantally, i.e., when /r/ assibilates to [ž] that it has the feature [+ strident], not in its normal occurrence, i.e., intervocalically and initially, where it is a voiced flap or voiced fricative. Now if the

systematic phoneme /r/ is a vocalic liquid, as Fraenkel, too, has specified
it, how can it also be specified as [+ strident], as we find in Fraenkel
(p. 452)? In sum, it is true that Azerbaijani /r/ tends to be devoiced
finally and before consonants, which seems to produce an impression of
stridency; however, if 'stridency is a feature restricted to obstruent
consonants and affricates [whereas] plosives and sonorants are nonstrident'
(Chomsky and Halle, 1968:329) we cannot label Azerbaijani /r/ as both
a vocalic liquid and a strident segment. And if 'strident liquids. . .
are nonvocalic' (Chomsky and Halle, 1968:329), again, it is contradictory
to specify Azerbaijani /r/ as [+cns, +voc. . . +strid.].

2.3.1. <u>Färzanä 1965</u>. Färzanä finds in Azerbaijani nine vowels
(a e ê i î o ô u û; p. 20) which he classifies according to their back/
front, open/close, unrounded/rounded features, and 23 consonants (pp.20-4),
in an arrangement like

    glottal: h

    velars: q, ɣ, x

    palatals: g-k, y

    pre-palatals: d-t, c-ç, z-s, j-ş, r, n, l

    labio-dentals: v-f

    bilabials: b-p, m

Färzanä's a e ê i î, o ô u û correspond to /a æ e i ɨ o ö u ü/,
respectively, and his q y c ç ş j correspond respectively to /g j ǰ č š ž/.

2.3.2. Färzanä first establishes the point that vowels harmonize
in Azerbaijani since it is a Turkic language. Then he tackles the
questions of native words, loanwords, and the degrees of nativization,
with admirable conciseness, yet a degree of comprehensiveness. E.g., he
shows that in native Azerbaijani words vowels in stems and suffixes

harmonize in backness or frontness, e.g., [ǰözæl] 'beautiful',
[ǰözællæːr] 'the beauty', [ǰözælliẋ] 'beauty', [ajri̵] 'separate',
[ajri̵li̵ẋ] 'separation'. Then he shows that (1) there are some loans that
already have this harmony pattern, e.g., [æsæːr]<Arabic <u>athar</u> 'effect',
[hæsræːt]<Arabic <u>ḥasrat</u> 'anguish', [šæfæːg]<Arabic <u>šafag</u> 'twilight',
(2) some words which in the lending language contained both front and
back vowels but after entering Azerbaijani have undergone harmonizing
changes: [rahat]<Arabic <u>rāḥat</u> 'comfortable', [tamaša]<Persian <u>tāmāšā</u>
'spectacle', etc., (3) some loanwords which have not acquired Azerbaijani
vowel harmony. Their original phonetic structure has remained almost
intact: [mæhbup]<Arabic <u>maḥbūb</u> 'beloved', [sæːrbaz]<Persian <u>sãːrbāz</u>
'soldier', [tæːrānæ]<Persian <u>tārāne</u> 'song'.

  2.3.3. Most of Färzanä's insightful discussion of vowel harmony
is reflected in the section on vowel harmony to be discussed in Chapter
4. Yet there are two points of some importance not to be omitted here:
(1) mid vowels appear only in the initial syllable of words; (2) rounding
harmony in suffixes is mostly a modern phenomenon. This observation by
Färzanä can easily be substantiated upon comparing the form of the modern
dictionary entries (e.g., Moran, 1945; Äzizbäkov, 1965) for the words
'fox', 'lamb', 'flock', 'true', 'tube, pipe', 'clear', etc., i.e.,
<u>tülkü</u>, <u>guzu</u>, <u>sürü</u>, <u>doǧru</u>, <u>boru</u>, <u>duru</u>, etc., with their pronunciation in
Tabriz: [guzi], [süri], [doǧri], [bori], [duri], etc. In these and
similar forms we see the archaic stage without the rounding harmony.
Note that the lack of rounding harmony can be traced from Old Turkic
to present. (See Emre, 1949:68 for further explanations.)

  2.3.4. As Färzanä observes, Azerbaijani vowels are nonlong. This
fact accounts for the shortened vowels in some thoroughly nativized

loanwords. This is not to deny the occurrence of long vowels in non-assimilated loanwords, or the phonetic formation of long vowels in native words under predictable conditions.

2.3.4.1. Färzanä observes that from among the nine Azerbaijani vowels /ɨ/ (i.e., the high back unrounded) is shorter than the others. 'And it is for this deficiency,' he observes "that ɨ does not have the fitness of appearing word-initially, and in such cases gives its place to i' (p. 30).

2.3.4.2. I wonder if this argument of Färzanä holds at all. He himself acknowledges the existence of initial [ɨ]. He says, 'words whose initial syllable consists of the vowel ɨ, in writing, this _sound_ [my emphasis H.S.], by violation of vowel harmony is written i, e.g., inanmaq 'to believe', ilan 'snake'.' And most strangely he goes on to say, 'such words even if their initial i is pronounced [ɨ], as in [ɨlɨg] 'lukewarm', [ɨšɨg] 'light', [ɨldɨrɨm] 'thunderbolt' are represented with i in writing, thus ɨ is deprived of the initial position, though in other instances it enjoys equal rights with other vowels' (p. 30). Apparently, a confusion of 'sound' and 'letter' has crept here. Language is speech, and if there are words with initial [ɨ] pronunciation, then we cannot deny the existence of this pronunciation even if in writing (because traditional Arabic script does not reflect the difference) we have only one letter i to stand for both [i] and [ɨ]. And since Färzanä's argument for the shortness of [ɨ] is based on the supposition that [ɨ] does not occur initially, the shortness claim falls when we find that according to Färzanä himself, we do have initial [ɨ] in words like [ɨlɨg], [ɨšɨg], [ɨldɨrɨm].

2.3.4.3. It is true, however, that the initial [ɨ] is very infrequent in urban Tabriz speech. I seem to have two [ɨ]-initial words in my speech, i.e., [ɨšgɨrmax] 'to hiccup', and [ɨlxi] 'herd'.[2]

2.3.5. The existence of mid vowels in noninitial syllables, in words like <u>alov</u> 'flame', <u>gašov</u> 'curry comb', <u>buzov</u> 'calf', <u>buxov</u> 'fetters', <u>oxlov</u> '(cook's) rolling-pin', etc., contradicts the fact that mid vowels are restricted to the initial syllable.[3]

2.3.5.1. While all the linguists whose work on Azerbaijani phonology we have examined mention the restriction about the occurrence of mid vowels in Azerbaijani, none except Färzanä comments on the origin of the [o] itself in the second syllable of the cited words. Whereas others take the occurrence of the [o] in noninitial syllables as an 'exception' (Dämirchizadä, 1972:56, 61, 129), a 'phoneme' (Akhundov, 1973:132-3), only Färzanä observes that the [o] in the noninitial syllable of the cited words is a phonetic output.

2.3.5.2. Although he does not speak of 'underlying segments' and 'phonetic representations,' Färzanä's brief comment on the origin of the [o] in the unexpected position in the cited words is similar to a generative view. He says:

> Although the sound [o] in several occasions, with the help of the letter <u>v</u> participates [i.e., [o] is conditioned by this <u>v</u> H.S.] in the second syllable of the words like <u>alov</u> 'flame', <u>buxov</u> 'fetters', <u>buzov</u> 'calf', <u>gašov</u> 'curry comb', this [[o] H.S.] is a phonetic phenomenon (Färzanä, 1965:30).

2.3.5.3. His view that [o] (similarly [ö]) in the noninitial syllable of a word is a phonetic form is another way of saying that it is not a 'phoneme' but a derived segment. And this presupposes an underlying segment which for some reason Färzanä does not specify.

2.3.5.4. But it is not difficult to discover this underlying segment if, in the light of Färzanä's observation, we study examples like those cited by him against their earlier forms. The words <u>buzov</u> [bizow]

'calf', buxov [buxow] 'fetters', gɨrov [gɨrow] 'hoar-frost', būlöv [bilöẅ] 'whetstone' appear as buzagu (58-18)[4], bugagu[5] (446-26), gɨragu (446-11), and bilegu (447-19) in Kashghari, 1072-3.

2.3.5.5. The Azerbaijani version of such early forms which persist in Turkish (e.g., buzağɨ, bukağɨ, kɨrağɨ, bileği), can now be accounted for by the following transformational rule which deletes the final vowel, changes the [g]/[ǵ] to [w]/[ẅ], and rounds the vowel preceding the [w]/[ẅ]:

$$
\begin{bmatrix} +syl \\ \propto bk \end{bmatrix}
\begin{bmatrix} +cns \\ +hi \\ +vce \\ -cnt \\ -strid \end{bmatrix}
\begin{bmatrix} +syl \\ +rnd \end{bmatrix}
\# \implies
\begin{bmatrix} +rnd \\ -lo \end{bmatrix}
\begin{bmatrix} -cns \\ \propto bk \\ +rnd \end{bmatrix}
\emptyset
$$

1   2   3   4   1   2   3   4

In the forms derived by this rule the unexpected mid round vowel in the noninitial syllable, as Färzanä observes, is a phonetic product caused by the round glide, represented as a v in orthography.[6]

2.3.6. Färzanä clearly observes that, except in some regional speeches, there are no diphthongs in Azerbaijani. And in confirmation of this point he observes that the reason why Turkic languages, including Azerbaijani, do not have diphthongs is that each syllable in these languages can have only one vowel. Furthermore, these languages disallow the development of diphthongs. Thus, in two adjacent syllables of a word two vowels do not come side by side -- if this occurs, as the result of suffixation, usually a nonsyllabic sound intervenes. E.g., [k̂išiyæ]< /kiši+a/ 'man + ind. obj. marker', 'to the man', [balasɨ]</bala+ɨ/ 'child + third person singular genitive marker' 'his child', [dæväni]</dævä+i/ 'camel + dir. obj. marker' 'the camel', etc.. Note, however, that diph- thongs do occur in speech. E.g., [ow]</av/ov 'game', [dowšan]</davšan/ dovšan 'rabbit.' We shall find this in more detail in Shiräliyev's treat- ment below.

2.3.7. Unlike vowel sequences, medial consonant clusters of usually two, and less frequently, three segments, are allowed in Azerbaijani since it is a Turkic language. This leads to the question of the existence of geminate consonants in Azerbaijani. As Färzanä observes, apart from these medial geminates formed through the adjacency of a suffix consonant with an identical stem consonant (e.g., [jellær]</jel+lar/ 'winds', [æmmæk]< /æm+mak/ 'to suck', etc.), some geminates, mainly phonetic realizations are found in a limited number of Azerbaijani roots (e.g., [ælli] 'fifty', [bælli] 'known, evident', [dokguz]</dogguz/ 'nine', etc.).

2.3.8. Färzanä concludes his discussion of Azerbaijani sounds with a concise and orderly description of the most important phonological rules in Azerbaijani. First he explains a few basic points like 'sound change' and 'diachronic and synchronic' changes. His account is synchronic. He treats first some of the violations of the vowel harmony in Tabriz speech. Then, he gives examples of voicing assimilation, spirantization, final devoicing, point of articulation assimilation (progressive and regressive). In a highly organized manner, he gives examples of i-epenthesis, and consonant insertion, as well as examples of vowel and consonant deletion. Not aiming at a formal mathematical presentation, Färzanä's observations come in clear prose exposition.

2.4.1. <u>Dämirchizadä, 1972</u>. Dämirchizadä classifies Azerbaijani vowels by the following criteria:

1. The horizontal position of the tongue

 (a) front: i, ü, e, æ

 (b) central: e

 (c) back: a, i, o, u

2. The vertical position of the tongue

(a) close: u, ü, ɨ, i

(b) half-open: e

(c) open: o, ö, a, æ

3. Labialization: o, u, ö, ü

4. Quality: there are no diphthong phonemes

5. Quantity: vowel length nonphonemic in native words

6. Tenseness: all Azerbaijani vowels are nontense.

Of these 1-3 are self-explanatory, though one wonders why Dämirchizadä does not pair /ö/ along with /e/ as central/half-open. We shall comment on criteria 4-6.

2.4.2. 4. On the basis of the view that a diphthong is a single phoneme resulting from two vowel sources, Dämirchizadä argues that there are no diphthongs contrasting with monophthong vowels in literary Azerbaijani, though in the structure of some words in colloquial speech, as it is the case in some Azerbaijani dialects, diphthongs result from the combination of vowels, and at times from the sequence of a vowel and a following consonant like [j v f]. Dämirchizadä cites [toŭx] toyug 'hen', [jŭal] juval 'large bag', [böŭx] böyük 'great', [köŭl] könül 'heart(center of affection)', [noŭt] naft 'petroleum', [goŭm] gohum 'kin' to exemplify what he considers diphthongs. Dämirchizadä (1972:14) uses the sign ⌢ above vowel sequences to indicate that they are pronounced together like diphthongs. But this argument seems to confuse different processes. The fact (at least in the writer's idiolect) seems to be that a vcv sequence may become a vv sequence, not a diphthong. See 2.6.3.5-6, 2.6.5-3 for our view about Azerbaijani long vowels, diphthongs, and vowel sequences.

2.4.3. 5. Dämirchizadä rightly observes that vowel length is nonphonemic in native Azerbaijani words, though his view that the syncopating

i̇ in [agzi̇nda] /agi̇z+in+da/ 'in his mouth' is shorter than other vowels
seems to lack enough support. The fact seems to be that the disappearance
of i̇ and u in words like [agzi̇m]<[agi̇zi̇m]</agi̇z+im/ 'my mouth', [garni̇m]<
[gari̇ni̇m]</gari̇n+im/ 'my stomach', [burnum]<[burunum]</burun+im/ 'my nose',
etc. results from the shift of stress from them to the vowel in the
syllable following them. Thus, rather than a 'short' variant of i̇ or u
we may speak of these vowels in a weak position, which is the position
preceding or following a stressed syllable.[7] But even this is not excep-
tionless. We may have [agi̇zi̇m] 'my share of the milk of the young cow'
where unlike [agzi̇m] 'my mouth' syncopation of the vowel in the weak
position has not occurred.

2.4.4. Dämirchizadä also refers to the existence of some long
vowels in the Shäki dialect of Azerbaijani, e.g., [jāgi̇] 'enemy' vs.
[jagi̇] 'the oil' (accusative). This is interesting because in Tabriz
speech, too, we have [jāšil] 'green', [nārin] 'fine (size)', [gālin]
'thick', side by side with [jašil], [narin], [gali̇n] pronunciations.
One is tempted to think that these words with long [ā] have been remodeled
on the familiar Arabic morpheme structure cv̄cvc; on the other hand, one
is no less attracted to the idea that the native words with long vowels
preserve original Old Turkic long vowels. Three out of the six linguists
whose work on Azerbaijani phonology we have examined do speak of native
long vowels. In our generative phonology of Azerbaijani underlying long
vowel segments have a role in voicing the word-final obstruents in
monosyllabics. (See 3.10.2.3, 3.10.2.4)

2.4.4.1. It is true, however, that some long vowels _are_ phonetically
produced both in loanwords, and native words, e.g., [tǣlim]<Arabic taՐlīm
'education', where the voiced pharyngeal fricative has been replaced by

length. But not all phonetic long vowels are of this kind. E.g., despite
Därmichizadà's view that the word for 'time, timepiece' has a single long
[ā] (p. 46), the fact seems to be that it has a sequence of two vowels
of ordinary length, i.e., it is [saat]<Arabic sāʕat 'time, timepiece'.
According to Akhundov (1973:130), too, 'facts show that whether in saat
or in any other word with a sequence of aa, there is not a single long a,
but two short a's.'

2.4.4.2. The difference between the long syllabic part in [tǣlim]
and [saat] 'time, timepiece' is that in the derivation of [tǣlim]<
/tæʔlīm/<Arabic taslīm 'education' the deletion of the glottal stop
(which has replaced the Arabic voiced pharyngeal fricative in the Azerbai-
jani underlying form /tæʔlīm/) is compensated for by addition of length to
the vowel preceding the deleted segment in the underlying form, whereas in
the derivation of [saat]</sāʔæt/<Arabic sāʕat 'time, timepiece' the
deletion of the underlying glottal stop has only removed the barrier
between the two vowels of ordinary length. It is as a result of this
deletion of the consonantal barrier that the uninterrupted articulation
of the two vowels of ordinary length gives the impression of a long [ā]
which is not a single segment in my idiolect of Tabriz speech. The
derivation of the words [tǣlim] and [saat] may show the difference
between the [ǣ] in [tǣlim] and [aa] in [saat].

	/t æ ʔ l ī m/	/s ā ʔ æ t/
(1) (FVS)(3.12.3.4)		i
(2) (NFVS)(3.12.3.3)		a
(3) (Glt-wk)(1)(Ch.4)		h
(4) (2)		∅
(5) (VL)	ā ∅	
(6) (VH)		a
	[tǣlim]	[saat]

In these derivations the rules (2) (3) (4) (6) for the derivation of [saat], and (1) (3) (5) for the derivation of [tæ‾lim] have this order.

2.4.4.3. Thus, we have two kinds of phonetically produced long vowels: one represented by the long vowel in [tæ‾lim]</tæʔlim/<Arabic taslīm 'education' where the deleted segment actively contributes to the production of the long vowel, the other (i.e., the one which Dämirchizadä gives as [a‾] in [sa‾t]) represented by [saat]</saʕæt/<Arabic saʕat 'time, timepiece' where the deleted segment produces two contiguous identical vowels. In other words, the length which is not that of a single long vowel results from the adjacency of two identical vowels, which adjacency in turn results from the deletion of the intervocalic segment.

2.4.4.4. The distinction which we make between a single long vowel (e.g., in [ja‾šil] 'green', [na‾rin] 'fine (size)', [ga‾lin] 'thick', [a‾gil]< Arabic ʕaqil 'wise', [tæ‾lim]<Arabic taslīm 'education', etc.) and long vowel which consists of two identical vowels (e.g., in [saat]<Arabic saʕat 'time, timepiece', [šuur]<Arabic šuʕūr 'intelligence', [sæ æ r]< Arabic sahar 'morning', [tæ æ mmül]<Arabic taʔammul 'thought, reflection', [tæ æʒʒüb]<Arabic taʕajjub 'astonishment', etc.) is confirmed by the syllabic structure of the 'long' vowel in question. Whereas the single stress on the long vowel in [ja‾šil], [na‾rin], [ga‾lin], [a‾gil], [tæ‾lim], etc. shows that this is a single long vowel, the double stress on the 'long' vowel in [saat], [šuur], [sæ æ r], [tæ æ mmül], [tæ æʒʒüb], etc. proves that the 'long' vowel in such words consists of two segments.

2.4.5. 6. Dämirchizadä speaks of tense vowels (i.e., long vowels) and nontense vowels (i.e., the ordinary and the, allegedly, shorter vowels), though he also points out that the tense-nontense classification can be made in some speeches only, not in the literary dialect.

2.4.6. Finally, Dämirchizadä points out that there are nasal vowels in some Azerbaijani dialects, though not in the literary dialect. On the basis of Dämirchizadä's description nasal vowels are phonetic phenomena in whose production a vowel preceding a nasal consonant is nasalized and the nasal segment is deleted, e.g., [aldɨ̃z]</aldɨnɨz/ 'you acquired', [sã̃ǩ /sæ næ / 'to thee', [mã̃]</mæ næ / 'to me', etc. (Dämirchizadä, 1972:47).

2.4.7. Dämirchizadä finds in Azerbaijani the following 25 consonants all of which, except for [x́] and [k], he considers as the phonemes of Azerbaijani. He hesitates to posit [x́] and [k] as phonemes, because neither of them is symbolized in Azerbaijani orthography, and while [x́] is restricted to the syllable-final position, the voiceless velar stop [k] is found primarily in loans.

p	t		ḱ	(k)		
b	d		ǵ	g		
	f	s	š	(x́)	x	h
	v	z	ž	j	ǥ	
			č			
			ǰ			
m		n				
			l			
			r			

2.4.7.1. Since the basic points of Dämirchizadä's description of Azerbaijani consonant phonemes can be gathered from the above chart, we shall point out only the cases of important differences with the analysis presented here.

2.4.7.2. Dämirchizadä's description of /č ǰ ḱ ǵ/, palatal affricates and stops, does not account for their realization in Tabriz speech. We

shall take up the question of the realization of these segments in Tabriz
speech, in the next chapter.

2.4.7.3. An interesting point is the question of the voiceless
palatal fricative [x́] which Dämirchizadä seems to consider to have the
potential for being a phoneme though it is not a fully-formed phoneme,
yet (96). Note that to treat [x́] as a potential phoneme, in terms of
generative phonology means to consider [x́] as an underlying segment, not
a predictable phonetic segment. But the fact is that [x́] is a phonetic
segment derived by rule, not an underlying segment. [x́] is produced when
the palatal stop [ḱ] (see (1.20) and (3.2.11) for the status of the [ḱ]
in Azerbaijani dialects) is in preconsonantal or word-final position in
many dialects of Azerbaijani including the Northern literary dialect
described by Dämirchizadä, and Tabriz speech. E.g., in these dialects
we find [kǽxlix́] ([ɟǽxlix́] in Tabriz) 'quail', [ǽxdim] 'I planted',
[čörǽx́] ([cörǽx́] in Tabriz) 'bread', etc..

2.4.7.4. Considering that orthographically these words are käklik,
akdim, čöräk, Dämirchizadä states that the preconsonantal and the final
k̇'s are mere symbols for [x́] in default of an independent symbol for [x́]
in Azerbaijani orthography. While this is superficially true, the
appreciation of the relationship between [ḱ] and [x́] is lacking in
Dämirchizadä's description. Hence, he is compelled to consider [x́] as a
sound of some phonemic value for which Azerbaijani orthography has no
symbol, hence it is symbolized with k.

2.4.7.5. But this scarcely seems to reflect reality. The fact is
that [x́] is the preconsonantal and final variant of [ḱ] in Tabriz speech
and the dialect Dämirchizadä describes. This can be seen from the alter-
nation of [x́] and [ḱ] in such examples as: [ǽx́] äk 'plant!', [ǽxdim]

<u>äkdim</u> 'I planted', but [æ kír̃æm] ([æ ʃiræm] in Tabriz) <u>äkiräm</u> 'I am

planting.' Obviously, the [k̃] which finally ([æ x́]) and preconsonantally

([æ x́dim]) is spirantized to [x́], surfaces before the vowel ([æ kír̃æm]/

[æ ʃiræm]).

    2.4.7.6. Whereas in these dialects the [k̃] in monosyllabics like

[č̃æ x́] ([č̃æ x́] in Tabriz) 'to draw', [tü x́] 'hair', [ti x́] 'sew', [tæ x́]

'alone', etc. (but not in polysyllabics) appears phonetically before

vowels, there are dialects of Azerbaijani where [x́] is not produced.[8]

I.e., the [k̃] surfaces unspirantized, hence the orthographic <u>käklik</u>,

<u>äkmäk</u>, <u>čöräk</u> represent also the phonetic forms. Thus we may conclude

that [x́] is a positional phonetic realization of the [k̃]. This can also

be indirectly deduced from the derivation of [j] in words like [cöræji]<

[čöræ ǵi]</čöræ k+i/ 'bread' (accusative) (see 2.4.7.8-9).

    2.4.7.7. The final [k̃] in polysyllabic words does not surface be-

fore vowels in many dialects including the literary and Tabriz dialects.

Rather, it is realized as [j], e.g., [cöræjæ] 'to the bread', [inæ jæ]

'to the cow', etc.. Such forms may give the impression that [j] results

from the voicing of [x́] before a vowel. But this does not seem to be the

case because since (as discussed in 2.4.7.3-9) [x́] is a phonetic form

((a) because of the recoverability of the [k̃] in monosyllabics, (b)

because the [k̃] surfaces unchanged in other dialects of Azerbaijani) we

do not have an underlying form like */čöræ x́+i/ in order to obtain [cöræji].

    2.4.7.8. The correct derivation of [cöræji] is from an underlying

form like /čöræ k+i/, through the intermediate stage of [čöræ ǵi], as a

result of [k̃]→ǵ/vcv-+v, followed by the general rule in the dialects

including the literary and Tabriz, i.e., ǵ→j/v- (see 3.6.4.1), as we

find it in [ijit]</igid/ 'valiant', [düjmæ]</dügmæ/ 'button', [dæ j]<

/dæg/ 'touch', [bæj]</bæg/ 'gentleman', etc..

2.4.7.9. Thus [j] in [cöræji], [inæji], etc. does not result
from the voicing of [x̌], rather the spirantization of the [ǧ] after a
vowel which in turn, in words like [čöræji] ([cöræji] in Tabriz),
[inæji], etc., results from the voicing of the [ǩ] before a vowel, as
in /cöræk+i/, /inæk+i/, etc..

2.4.8. Dämirchizadä's view of the voiceless velar stop is factual.
He observes that the voiceless velar stop is mainly to be found in some
recent loans. But the voiced velar stop occurs freely, though not so
frequently word-finally. The fact seems to be that in the majority of
Azerbaijani dialects no native Azerbaijani word orthographically ending
in g is so pronounced. This is inferable from Shiräliyev's (1967:96)
classification of Azerbaijani dialects with respect to the realization
of the /g/ as [x] or [g̣] in polysyllabics word-finally.

2.5.1. Akhundov, 1973. This is an impressive physiological,
acoustic, statistical study rich beyond the limits of our scope here.

2.5.2. Akhundov makes a not unappealing case for long vowel
'phonemes' in Azerbaijani. After examining different views for and
against the existence of long vowel phonemes in Azerbaijani, Akhundov
concludes that there are long vowel phonemes. He arrives at this con-
clusion well aware that the long vowels have primarily foreign sources
(p. 71), and arise from phonological processes. But he observes that in
contemporary phonology the phonemic status of a vowel is not based on
its source, rather it is based on the role the vowel plays synchronically.
Hence, whether they are originally of the primarily lengthened vowels
(e.g., da͞š 'stone' vs. daš 'distant' in Turkmen), or of the secondarily
lengthened ones (e.g., [a͞lim]<Arabic ʕalim 'learned' where the long vowel

is the unchanged Arabic long $\bar{a}$, or [mǣlum]<Arabic ma§lūm 'known' where
the long vowel has resulted from the replacement of the [ʕ] by length)
long vowels in Azerbaijani on the basis of their linguistic condition,
are to be considered independent phonemes.

2.5.3. Next is Akhundov's position on the question of the existence
of diphthongs in Azerbaijani. He rejects Dämirchizadä's view that diph-
thongs are not phonemic. Dämirchizadä's point was that a diphthong is a
single vowel resulting from two contiguous vowels. Akhundov rejects this
by observing that a diphthong is not necessarily quantitatively one vowel
resulting from two contiguous vowels, rather a diphthong is explained as
the pronunciation of two vowels within one syllable. Note, however, that
since each vowel is a syllabic segment, two vowels cannot be pronounced
within one syllable. What Akhundov implies is, probably, that the second
vowel in a sequence of two vowels is changed to a glide and thus the
resultant sequence of VG forms one syllable. Consequently, Akhundov
contends that Dämirchizadä's view of diphthongs results from his taking
orthography as the basis of his judgment, i.e., by looking at the VC
successions of, e.g., ov and öv rather than their phonetic values which
are [ou] 'game' and [öü] 'home.' By [ou] and [öü], again Akhundov must
intend [ow] and [öw] which being successions of VG are pronounced within
one syllable.

2.5.3.1. According to Akhundov, there are two diphthongs in Azerbai-
jani: /öü/ and /ou/ (in fact, as just mentioned they are [öw] and [ow]),
and they have phonemic status. Akhundov's criterion for the phonemic
value of the diphthongs is that they contrast with the monophthongs /ö/
and /o/, e.g., [doǧa] 'so that (she) gives birth' vs. [douǧa] (in fact
[dowǧa]) 'rice and vegetable soup with yogurt.' Faithful as it is,

Akhundov's phonetic approach fails to shed light on a more general fact

in Azerbaijani. Rounded diphthongs, as already mentioned (see Note 6;

2.3.6; 2.6.5.2), result from the following rule:

$$
\begin{bmatrix} +syl \\ \propto bk \end{bmatrix} \quad v \quad \left\{ \begin{matrix} [-syl] \\ \# \end{matrix} \right\} \implies \begin{bmatrix} +rnd \\ -lo \end{bmatrix} \begin{bmatrix} -cns \\ +hi \\ \propto bk \\ +rnd \end{bmatrix}
$$

$$ 1 \qquad 2 \qquad 3 \qquad\qquad 1 \qquad 2 \qquad 3 $$

This rule is also responsible for the diphthong in [dowga]</davga/ 'rice

and vegetable soup with yogurt.' Apparently, the other diphthong mentioned

by Akhundov, i.e. [ö̈w], too, is formed by the application of this rule,

e.g., [bilöw]</bilev/ 'whetstone.' In a generative analysis if [ow] and

[öw] are predictable by rules, they cannot be underlying segments.

    2.5.4. The vowel system proposed for Azerbaijani by Akhundov con-

sists of: (a) nine ordinary vowels: i ü e æ a o ö u ɨ

           (b) five long vowels: ī ē ō ǣ ā

           (c) two diphthongs: öü ou.

    2.5.4.1. Akhundov begins the description of each vowel with some

brief historical information as to the sources of the vowel, cites its

features, shows the place it holds in contrast with other vowels, indi-

cates with which consonants it is or is not used, and finally cites its

allophones. Akhundov's treatment is thorough and valuable particularly

for its aim, i.e., the description of the phonemic system of Azerbaijani.

    2.5.4.2. Akhundov closes his analysis of Azerbaijani vowels with

two important generalizations: (1) all closed vowels in Azerbaijani, in

the syllable preceding the stressed syllable, are shortened, (2) "In the

closed round vowels the degree of labialization stands in an opposite

relationship to the degree of the nearness of the vowel to the end of the

word, i.e., the nearer the round vowels are to the end of the word, the more they lose their roundness."

2.5.4.3. As for (1), it confirms the point already mentioned (see 2.4.3) about the disappearance of some vowels immediately before a stressed vowel as in [aɡzɨm]<[aɡɨzɨm]</aɡɨz+im/ 'my mouth', etc.. Here, apparently, when the personal suffix is added, the last syllable attracts the main stress leaving the syllable from which stress has shifted with a weak (or in Akhundov's terms 'short') vowel to undergo syncope. This is identical with our view (2.4.3) except that there are restrictions to it, as it was pointed out in connection with Dämirchizadä's view of the existence of 'short' vowels in Azerbaijani. And as for (2), it is in agreement with the observation that 'in certain Finno-Ugric and Turkic languages. . .the vocalism of the first syllable is richer than the vocalism of all other syllables' (Trubetzkoy, 1969:98). Upon examination of the occurrence of the round vowels of Azerbaijani in the light of the quoted observation, we find that whereas all the four round vowels of Azerbaijani (i.e., /ü u ö o/ with the exception of the predictably formed mid round vowels [ö o] which occur in noninitial syllables, see 2.3.5-5), occur in the initial syllable (e.g., [düzɡün] düzgün 'truthful', [guzgun] guzgun 'hawk', [ɡölüm] gölüm 'my lake', [golum] golum 'my arm'), only /ü/ and /u/ can occur in the noninitial syllable. Hence Akhundov's generalization is valid with re- spect to the nonoccurrence of the mid round vowels, not that of the high round vowels.

2.5.5. With no space to analyze the information on the history of the treatment of Azerbaijani consonants, and Akhundov's detailed articu- latory description of each consonant, we shall refer in his treatment only to a few points of particular importance.

2.5.5.1. According to Akhundov text books on Azerbaijani generally give 23 consonants for Azerbaijani. Akhundov himself gives 25, because, unlike others, he includes in the consonant system of Azerbaijani a voiceless velar stop, and a velar nasal.

2.5.5.2. In his physiological/acoustic analysis of the Azerbaijani sound system Akhundov finds delicate differences which enable him to supplement this section with a statistical analysis. These are obviously far beyond the scope of our inquiry. However, the following five points from the results of his physiological/acoustic analysis seem to be important as a frame of reference for the phonological processes in Azerbaijani (p. 203):

1. All word-initial voiced consonants are voiceless in the beginning stage of their articulation.

2. All word-final consonants are voiceless in the final stage of articulation.

3. All consonants occurring after vowels are somewhat voiced in the initial stage of their articulation.

4. All consonants are labialized in accordance with their environment.

5. All consonants, in accordance with their environment are fronted, or made back, or nasalized to certain degrees.

2.5.6. In his phonological analysis of Azerbaijani consonants, Akhundov relies on articulatory criteria, though he is not averse to employing diachronic information where needed -- e.g., to distinguish an underlying voiceless consonant from an environmentally devoiced consonant (e.g., the /x/ from the [x] resulting from g→[x]/cvcv-#). His first criterion for distinguishing Azerbaijani underlying consonants from

similar phonetic realizations, however, is the 'strong position,' i.e.,
the position before vowels. 'In this position, even if Azerbaijani con-
sonants cannot keep their characteristics from 'anthropophonic' [? H.S.]
point of view, they wholly preserve their phonological characteristics'
(p. 221).

2.5.6.1. Akhundov analyzes the consonants in the same way that he
analyzes the vowels, with respect to their sources, the contrasts they
form with other consonants, their occurrence with other consonants, and
their allophones.

2.5.6.2. From among the consonants, Akhundov's treatment of the
affricates /č ǰ/ and the velar stops is of interest to us. We shall deal
with these in our discussion of Azerbaijani underlying segments in
Chapter 3. Briefly, Akhundov is aware that some Azerbaijani dialects
(e.g., the Tabriz dialect) have [c ʒ] for the [č ǰ] in some other dialects
of Azerbaijani (e.g., the Baku dialect). And his discussion of the
palatal and velar stops has theoretical value with regard to the relation-
ship of the palatal and velar stops.

2.5.6.3. From Akhundov's survey of the works of Northern Azerbaijani
linguists we learn that the final palatal stop [ḱ] phoneme has received
considerable attention. According to Akhundov the question whether or
not [ḱ] is pronounced finally in polysyllabic words is a controversial
issue in Azerbaijani linguistics (p. 248). Although Akhundov himself
dismisses the view of the change of [ḱ] to [j] as unsatisfactory, we can
appreciate the view of those Azerbaijani linguists such as M. Hüseynzadä and
Ä. Äfändizadä who hold that the word-final [ḱ] in polysyllabics changes
to [j] before vowel initial words and suffixes. Akhundov's brief survey
does not provide us with more information about Hüseynzadä and Äfändizadä's

views on the final [k̇], yet the little we learn about their view seems to corroborate ours -- given above (2.4.7.3-9) on the question of [k̇] in the section devoted to Dämirchizadä's. But Akhundov rejects this view, because in words like [æk̇ir]</æk+ir/ 'he is planting,' [čæk̇ir]</čæk+ir/ 'he is drawing' and the loanword [fiziki]</fizik+i/ 'physical,' the prevocalic /k/ does not change to [j]. Yet this does not invalidate the fact that the final [k̇] does change to [j] before a vowel in polysyllabics, e.g., [čöræji]</čöræk+i/ 'the bread' (accusative). Generally speaking, final consonants in monosyllabic roots usually do not follow the same rule that governs the final consonants in polysyllabic words in Azerbaijani, e.g., [gab]</gab/ 'dish' but [bošgap]</bošgap/ 'plate'; [ad]</ad/ 'name' but [murat]</murad/ 'man's name'; [dağ]</dag/ 'mountain' but (the monomorphemic) [budax]</budag/ 'branch of tree,' etc.. Further, if [k̇] does not change to [j] in fizik 'physics' in the dialect Akhundov describes, it must be because it is a nonnative learned word, though in my speech fiziki is [fiziji] especially as a noun in the accusative, although less so as an adjective.

2.5.6.4. Akhundov's view of the relation between the voiced velar stop and the voiced palatal stop is quite important from the viewpoint of generative phonology. The essence of his argument is that on the basis of backness/frontness of the vowels, we can predict the [-ant, -cor] stop to be a velar or a palatal stop. Our discussion of synharmony (3.2-8) owes its development to Akhundov's view of the relationship between the voiced velar stop and the voiced palatal stop.

2.5.6.5. As for his view of the voiceless velar stop, Akhundov belongs to that group of linguists who finds the voiceless velar stop in Azerbaijani -- a borrowing from Russian. In fact, Azerbaijani speakers

familiar with Persian, Arabic, Russian and other languages with a voice-
less velar stop do use the voiceless stop in not-fully-assimilated loans
containing this sound. It is also phonetically produced through devoicing
the voiced velar stop, as in [sæꭇkgæl]</saggal/ <u>saggal</u> 'beard.'

2.5.6.6. Akhundov also insists upon positing a velar nasal phoneme
which does not seem quite justifiable -- neither in the Northern Azerbaijani
literary dialect nor in Tabriz speech.

2.6.1. <u>Shirāliyev, 1967</u>. Shirāliyev's valuable work seems to treat
most of the sounds to be found in Azerbaijani dialects to the north of the
Aras river. His treatment is also applicable to the sounds of Tabriz speech,
and probably all Azerbaijani dialects to the south of the Aras.

2.6.2. In his treatment of the vowels Shirāliyev observes that in
Azerbaijani dialects vowels may have long and short variants, and nasalized
variants, too, are encountered.

2.6.2.1. Shirāliyev classifies Azerbaijani vowels with respect to:

(1) Frontness/backness:

    (a) front vowels: i ($\bar{\text{i}}$ ĭ $\tilde{\text{i}}$ i̧)[9], e ($\bar{\text{e}}$), ü ($\bar{\text{ü}}$ ŭ $\tilde{\text{ü}}$), æ ($\bar{\text{æ}}$ æ̆ $\tilde{\bar{\text{æ}}}$),
       ö ($\bar{\text{ö}}$);

    (b) back vowels: a ($\bar{\text{a}}$ ă $\tilde{\text{a}}$), ɨ ($\bar{\text{ɨ}}$ ɨ̆ $\tilde{\bar{\text{ɨ}}}$ɨ̧ i̧), o ($\bar{\text{o}}$ ŏ $\tilde{\text{o}}$),
       u ($\bar{\text{u}}$ ŭ $\tilde{\text{u}}$ $\tilde{\bar{\text{u}}}$ u̧);

(2) Openness/closedness:

    (a) Open vowels: a ($\bar{\text{a}}$ ă $\tilde{\text{a}}$), æ ($\bar{\text{æ}}$ æ̆ $\tilde{\bar{\text{æ}}}$), o ($\bar{\text{o}}$ ŏ $\tilde{\text{o}}$),
       ö ($\bar{\text{ö}}$);

    (b) closed vowels: ɨ ($\bar{\text{ɨ}}$ ɨ̆ $\tilde{\text{ɨ}}$ $\tilde{\bar{\text{ɨ}}}$ ɨ̧), i ($\bar{\text{i}}$ i̧ $\tilde{\text{i}}$ i̧), u ($\bar{\text{u}}$ ŭ $\tilde{\text{u}}$ $\tilde{\bar{\text{u}}}$ u̧),
       ü ($\bar{\text{ü}}$ ŭ $\tilde{\text{ü}}$), e ($\bar{\text{e}}$);

(3) Round/unroundness:

    (a) round vowels: u ($\bar{\text{u}}$ ŭ $\tilde{\text{u}}$ $\tilde{\bar{\text{u}}}$ u̧), ü ($\bar{\text{ü}}$ ŭ $\tilde{\text{ü}}$), o ($\bar{\text{o}}$ ŏ $\tilde{\text{o}}$), ö ($\bar{\text{ö}}$);

(b) unrounded vowels: a ($\bar{a}$ $\breve{a}$ $\tilde{\bar{a}}$), æ ($\overline{æ}$ $\breve{æ}$ $\tilde{\bar{æ}}$), ɨ ($\bar{ɨ}$ $\breve{ɨ}$ $\tilde{ɨ}$ $\tilde{\bar{ɨ}}$ $ɨ^i$),

i ($\bar{i}$ $\breve{i}$ $\tilde{i}$ j), e ($\bar{e}$).

2.6.2.2. This list of Azerbaijani vowels perhaps includes all the vowels occurring in different dialects of Azerbaijani. It is not clear, however, why Shiräliyev assigns the mid vowels /e/ and /o/ to different classes with respect to the feature 'open.' We find a similar enigma about Dämirchizadä's assigning /e/ to the class 'half-open' and /o/ to the class 'open' (see 2.4.1). In any case, neither from the point of view of tongue height, nor from the viewpoint of the openness of the lips may such classifications be supported.

2.6.2.3. Next, Shiräliyev examines the long vowels from the viewpoint of their source and their quality. Shiräliyev traces the long vowels used in Azerbaijani dialects to two sources: (1) Primary lengthening, (2) Secondary lengthening.

2.6.2.4. Long vowels by primary lengthening (the cause of which has not been explained in terms of the historical developments of the vowels) can be seen in a few Azerbaijani words in some Azerbaijani dialects. E.g., in [sārɨ^i] 'yellow', [gārɨ^i] 'old(female)', [bārɨ^i] 'at least', [mōrux] 'raspberries', in Nukha dialect; and [gārɨ] 'old (female)', [ānrɨ] 'beyond, yonder', [jējl] '?' in the Gazakh dialect.[10] Whether they are underlyingly long or predictably lengthened, as already mentioned (see 2.4.4), long vowels occur also in a few words in Tabriz speech. In the Turkmen Language, too, there are long vowels which apparently contrast with nonlong vowels (see 2.5.2).

2.6.2.5. Long vowels by secondary lengthening are formed as a result of the deletion of an adjacent consonant. In the category of long vowels originating from secondary lengthening, Shiräliyev includes long

vowels originating in both native words and nativized loanwords. E.g.,

[ā]< aga 'sir', [aš]< agać 'tree', [ālim]< Arabic ṣālim 'learned', [dāva]
'fight'< Arabic daṣwā 'claim.'

2.6.3. Concerning the quality of the long vowels, Shiräliyev in-
sightfully distinguishes between the single long vowels whose quality re-
mains constant throughout its pronunciation (as in [sārɨⁱ] 'yellow',
[gārɨⁱ] 'old (female)', [dāva] 'fight', [ādi]< Arabic ṣādi 'usual',
[mǣlum]< Arabic maṣlūm 'known', [kātib∼ʃātib]< Arabic kātib 'scribe',
[lālæ]<Persian lāle 'tulip') and 'diphthong-like vowels' whose quality
does not remain the same throughout its pronunciation. Shiräliyev distin-
guishes three kinds in this category: (a) falling or decreasing 'diphthong-
like vowels' whose last part gives the impression of weakening, and ending
in closed labial vowels (e.g., [goṷn] govun 'melon', [söṷt] söyüd 'willow',
[doṷšan] dovšan 'rabbit');[11] (b) rising or increasing 'diphthong-like vowels'
the final part of which is strongly pronounced, and thus gives the impres-
sion of length (e.g., [sǣr]< Arabic saḥar 'morning', [šǣr]< Persian šähr
'city', [sāt]< Arabic saṣat 'time, timepiece')[12]; (c)'mixed diphthong-like
long vowels' (e.g., [noṷt]<Persian naft 'petroleum', [atoṷz]</ata+nuz/ 'your
father') (Shiräliyev, 1967:29-30). I fail to find any difference between
the vowels in (a) and (c).

2.6.3.1. Shiräliyev may be right in finding three different kinds
of 'diphthong-like vowels' (i.e. diphthongs in our terms). His triple
diphthong system reflects the traditional classification of diphthongs
into level, falling, and rising diphthongs (see Gleason, 1961:255). Per-
haps (a) and (b) in (2.6.3) with due reservations (and certainly not in
my speech), can be called examples of falling and rising diphthongs.
This is on the assumption that in the dialect Shiräliyev describes, the

second underlying vowel in words like /gagun/ 'melon' and /sögüt/ 'willow'
become [-syllabic], thus creating a diphthong whose vowel being lower (hence
more sonorant than its high glide) is classified a falling diphthong.

2.6.3.2. Shiräliyev's 'mixed diphthong-like vowels' do not differ
in my pronunciation. Again, provided that the final vowel in Shiräliyev's
examples [atoȳz]< /ata+ng+i+z/ 'your father', [nöӱt]< Persian näft
'petroleum', etc. becomes [-syllabic], the resultant diphthong, as in
their formation [goӱn]< /gagun/ 'melon' and [söӱt]< /sögüd/ 'willow' in
(a), will be falling diphthongs.

2.6.3.3. In Shiräliyev's examples [sǣr]< Arabic saḥar 'morning',
[sāt]< Arabic sā̄at 'time, timepiece', however, we cannot see how it is
possible to speak of 'diphthong-like vowels.' Unlike in /gagun/ 'melon'
etc. where one of the vowels (i.e., the second vowel), apparently changes
to the round glide (e.g., [goӱn] in the dialects Shiraliyev describes),
there is no change of vowel quality in the words for 'morning', 'time-
piece', etc. In these words the vowels are identical, either in the
underlying representation as in /saḥær/ 'morning', or become identical
in the process of derivation as in [saat]< saʔat </sā̄æt/. Hence they
cannot give rise to diphthongs which are produced 'when a sound is made by
gliding from one vowel position to another' (Jones, 1956:22). In other
words, the identical vowels whose almost uninterrupted pronunciation in
the words for 'morning,' 'timepiece' etc. is described as 'rising
diphthong-like vowels' by Shiräliyev, in fact, have in Trubetzkoy's words
'an immovable degree of aperture' (Trubetzkoy, 1969:117). Hence, they
cannot produce diphthongs. Of course, nor does Shiräliyev call the syllabic
part in the words for 'morning', 'timepiece' etc. diphthongs. However,
apparently, what makes Shiräliyev call the syllabic part in the words for

'morning', 'timepiece' etc. a 'rising diphthong-like vowel' is that in these vowels 'the final part is strongly pronounced' (Shiräliyev, 1967:29). While this 'strong pronunciation' of the 'final part' of a syllabic part of a word (provided that the contiguous vowels constituting the syllabic part are not identical so that gliding from one vowel to the other is possible) is characteristic of rising diphthongs as in the French word [bwa] <u>bois</u> 'wood, forest', in connection with the words for 'morning', 'timepiece' etc. 'strong pronunciation' means pronunciation with primary stress. In other words, 'strong pronunciation' in the words for 'morning', 'timepiece', etc. whose respective identical vowels are low ([sæ æ r]< /sæhær/ 'morning', [saat]< saʔat</sāʔæt/ 'timepiece') cannot mean a rise in sonority (which characterizes rising diphthongs), because this would imply greater degrees of aperture and sonority while the low vowels /æ a/ are maximally open and maximally sonorant (see Stampe 1972:579-80).

2.6.3.4. Consequently, it seems to us that the syllabic part in the words for 'morning', 'timepiece' etc. is a sequence of identical vowels. In this sequence the first vowel has the secondary stress and the second (i.e. the final) vowel has the primary stress. Perhaps it is this sequence of secondarily stressed vowel and primarily stressed vowel that gives the impression of a rising diphthong-like vowel to Shiräliyev's perception. To our perception, however, there is a sequence of vowels in words like the word for 'morning', 'timepiece' etc. The existence of a vowel sequence rather than a diphthong-like vowel is also proved by the existence of alternations like [sæ hær]~[sæ æ r] 'morning', [sahat]~ [saat] 'timepiece', [rahat]~[raat] 'comfortable', [šæhær] [šæ æ r] 'city', etc. where the intervocalic [h] shows that there are two vowels,

though in the pronunciation without [h], too, a vowel sequence, with the
first vowel secondarily and the second primarily stressed, is perceptible.

2.6.3.5. In addition to 'diphthong-like long vowels', Shiräliyev
describes 'diphthongs' in Azerbaijani dialects produced by the deletion
of [j], [v], [n] (see 2.6.3.5-6). According to Shiräliyev there are two
kinds of diphthongs in Azerbaijani: (1) (a) fully-falling diphthongs[13]
consisting of [ou̯]/[öü̯], e.g., [gou̯n] 'melon' in Baku, Shamakhï, Mughan
dialects, [nöü̯t] 'petroleum' in Baku, Shamakhï, Mughan dialects and
Ikinji Shïkhlï speech of the Gazakh dialect, [au̯], e.g., [dau̯ga] 'rice
and vegetable soup with yogurt' in the Ilisu and Gum speeches of the
Gakh dialect, and [dau̯šan] 'rabbit' in the Ashagï Tala and Göyäm speeches
of the Zagatala dialect, [oi̯]/[öi̯], e.g., [atoi̯] 'thy father', [anoi̯]
'thy mother', [dæ döi̯] 'thy father', [næ nöi̯] 'thy mother' in the Baku,
Shamakhï, Mughan dialects, [æ i̯], e.g., [mæ i̯] 'me', [sæ i̯] 'thee' in
Hökmäli, Gobu, and Güzdäk speeches of the Baku dialect (Shiräliyev, 1967:
36-7), (b) half-falling diphthongs[14] consisting of [ou̯]/[öü̯] as in
[dou̯šan] 'rabbit', [döü̯læt] 'wealth, government', (2) rising diphthongs[15]
consisting of [u̯a], e.g., [du̯ax] 'lid' in the Gazakh dialect, [ü̯æ],
e.g., [bü̯æ] 'tarantula' in the Tovuz and Gazakh dialects, [o̯a], e.g.,
[o̯a]< ova 'for hunting' in the Baku, Shamakhï, Mughan dialects, [ö̯æ],
e.g., [ö̯æ]< övä 'to home' in the Guba dialect.[16]

2.6.3.5.1. Concerning Shiräliyev's treatment of diphthongs three
explanations are due: (a) how does the deletion of [j], [v], [n] create
a diphthong, (b) what is a 'fully-falling' diphthong, (c) what is a
'half-falling' diphthong?

2.6.3.5.2.(a) Here our findings in the Tabriz dialect differ from
Shiräliyev's in that Shiräliyev's examples (except for [ow] 'game',

[dowšan] 'rabbit', [döwlæt] 'wealth, government') in the Tabriz dialect
have vowel sequences, not diphthongs, e.g., the word for 'melon' is [goun]
~ [gohun]. The difference between the phonetic forms cited by Shiräliyev,
e.g., [goun] where the syllabic part of the word consists of a diphthong,
and the forms occurring in Tabriz speech with a VV sequence like [goun]
seems to be that whereas in the Tabriz forms the intervocalic segment is
deleted leaving a VV sequence, in the forms cited by Shiräliyev, the VG
sequence results from either the deletion of the intervocalic segment and
the subsequent change of the second vowel in the resultant VV to the
corresponding glide (see the derivation of [söwt] and [gown] in 2.6.3.5.2.1)
or only by deletion of the vowel after the glide in the -VGV- part of the
word (see the derivation of [söwt] and [gown] in 2.6.3.5.2.2). In other
words, in the derivation of the Tabriz forms and the forms cited by
Shiräliyev we assume the operation of the following rules.

(a) c → [-vce]/vcv — # (see 4.4.2)

(b) $\begin{Bmatrix} g \\ g \end{Bmatrix} \rightarrow \begin{Bmatrix} g \\ g \\ j \end{Bmatrix}$ /v — (see 3.6.4.1)

(c) $\begin{Bmatrix} g \\ j \end{Bmatrix} \rightarrow \begin{Bmatrix} w \\ w \end{Bmatrix}$ / — $\begin{bmatrix} +syl \\ +rnd \end{bmatrix}$ (see 2.3.5.5)

(d) [+syl] → [+rnd]/— $\begin{Bmatrix} w \\ w \end{Bmatrix}$ (see 2.3.5.5)

(e) $\begin{Bmatrix} w \\ w \end{Bmatrix} \rightarrow \emptyset$ / $\begin{bmatrix} +syl \\ +rnd \end{bmatrix}$ — $\begin{bmatrix} +syl \\ +rnd \end{bmatrix}$ (see 2.6.5.3)

(f) v → [-syl]/v— (inferable from the forms cited by Shiräliyev,
p. 36)

(g) v → ∅/G — (inferable from the forms cited by Shiräliyev, p. 36)

2.6.3.5.2.1. From Shiräliyev's examples [söüt] 'willow' (Chaylï
speech of the Gazakh dialect) and [goun] 'melon' (the Baku, Shamakhï,
and Mughan dialects) two analyses may be inferred. The first includes
the rules (a), (b), (c), (d), (g), as in the following derivation:

	'willow'	'melon'
	/sögüd/	/gagun/
(RVS)	ǧ	
(a)	.t	–
(b)	j	ǧ
(c)	ẅ	w
(d)	–	o
(g)	∅	∅
	[söẅt]	[gown]

2.6.3.5.2.2. The second analysis, deducible from Shiräliyev's
examples is slightly different in that in addition to the rules (a), (b),
(c), (d), the rules (e) and (f), too, operate, as in the following
derivation:

	'willow'	'melon'
	/sögüd/	/gagun/
(RVS)	ǧ	
(a)	t	–
(b)	j	ǧ
(c)	ẅ	w
(d)	–	o
(e)	∅	∅
(f)	ẅ	w
	[söẅt]	[gown]

Note that in the above derivations [söẅt] and [gown] are given
as [söy̰t] and [goy̰n] in Shiräliyev's transcription.

2.6.3.5.2.3. In the Tabriz pronunciation the words for 'willow'
and 'melon', on the other hand, are derived by the rules (a), (b), (c),
(d), (e) as shown. Rules (f) and (g) are not part of Tabriz speech.

	'willow'	'melon'
	/sögüd/	/gagun/
(RVS)		
(a)	ǧ t	–
(b)	j	ǧ
(c)	ẅ	w
(d)	–	o
(e)	ø	ø
	[söüt]	[goun]

2.6.3.5.3. The above derivations also account for the deletion of
[j] and [v] in which Shiräliyev sees diphthong formation. [j] and [v],
apparently refer to phonemic representations like /söjüd/ and /govun/
obviously based on the orthographic forms söyüd 'willow' and govun 'melon.'

2.6.3.5.4. Shiräliyev (p. 37) cites [atoị]~[dæ döị] 'thy father'
(accusative), [anoị]~[næ nöị] 'thy mother' (accusative) from the Baku,
Shamakhɨ, Mughan dialects. The diphthong in these forms seems to result
from the deletion of the second person singular genitive marker [n].
After the deletion of the [n] in these dialects the second vowel in the
resultant VV sequence, apparently, becomes a glide. But in the Tabriz
dialect the resultant VV sequence is separated by the insertion of the
round glides. The difference between the forms cited by Shiräliyev and
the Tabriz forms can be seen in the following derivations.

	Baku, Shamakhï, Mughan	Tabriz
	'thy father'	'thy father'
	/ata+ng+ï//dæ dæ+ng+ï/	/ata+ng+ï//dæ dæ+ng+ï/
	g ǵ	g ǵ
	o ɸẅ ö ɸẅ	o ɸẅ ö ɸẅ
	∅̣ ∅̣	− −
	̣ ̣	− −
	[atọï] [dædọ̈ï]	[atuwï] [dædüwï]

$$
\begin{bmatrix} +syl \\ \alpha bk \end{bmatrix} + \begin{bmatrix} +nas \\ +cor \end{bmatrix} \begin{bmatrix} -cut \\ +hi \\ +vce \\ -stnd \\ \alpha bk \end{bmatrix} \Rightarrow \begin{bmatrix} +rnd \\ -lo \end{bmatrix} \emptyset \begin{bmatrix} -cns \\ +rnd \\ \alpha bk \end{bmatrix}
$$
$$
\begin{array}{ccc} 1 & 2 & 3 \end{array} \qquad \begin{array}{ccc} 1 & 2 & 3 \end{array}
$$

(RVS)

(Glid-Del)(Inferable from Shiräliyev, p. 37)

(Glid-form)(3.11.2.26)

(MVC)(4.7.1)

This derivation seems to reflect a historic process because of the underlying /ng/ sequence whose simplification by the second rule is partially inferable from the relevant account by Shiräliyev (see note 17 to this chapter). The third and fourth rules and inferred from the [atoi̯] and [dæ döi̯] cited by Shiräliyev.

2.6.3.5.5. As for the questions (b) and (c) above (in 2.6.3.5.1) from the majority of his cited examples it appears that by 'fully-falling' diphthongs Shiräliyev means the diphthongs which are underlyingly two vowels separated by a nonsyllabic segment; the fully-falling diphthong is formed (as noted in 2.6.3.5.2) either by the deletion of the inter-vocalic segment and the subsequent change of the second V in the resultant VV to G, or by the deletion of the vowel in the VGV sequence.

2.6.3.6. Finally, by 'half-falling' diphthongs, as the majority of his examples show, Shiräliyev intends the [ow] and [öw] diphthongs which also occur in Tabriz speech, e.g., the Baku, Shamakhɨ, Mughan [dōu̯šan] 'rabbit', [dōu̯læt] 'wealth, government', the Tabriz [dowšan] 'rabbit', [döwlæt] 'wealth, government'.

2.6.4. On the basis of the discussions in (2.6.3.5.1-6), it seems to us that some of the phonetically formed 'long vowels' are in fact vowel sequences, e.g., [toux] toyug 'hen', [soux] soyug 'cold', [söüt] söyüd 'willow', [boux] böyük 'great', etc.. Although Azerbaijani linguists like Shiräliyev, Dämirchizadä, and Akhundov find the syllabic part of these words diphthongs in the dialects they describe, we find it more consistent to describe them as vowel sequences in Tabriz speech for the following reason:

2.6.4.1. Words like [toux] 'hen', [söüt] 'willow', etc., are bi-syllabic in Tabriz hence their syllabic part cannot consist of diphthongs,

because a diphthong is a combination of two vowels which form one syllable,
in the form of a vowel plus a glide. In other words, the segmental
structure of the syllabic part of the words [toux], [söüt], and the like,
is different from the segmental structure of the syllabic part of the words
like [dowšan] dovšan 'rabbit', [ow] ov 'game', [töwlæ] tövlä 'stable',
etc.. Whereas in the former the deletion of an intervocalic nonsyllabic
segment leaves a sequence of two vowels, in the latter a vowel is followed
by a glide.

2.6.5. It seems that the question of the long vowels, diphthongs,
and vowel sequences in Azerbaijani can be presented in a more logical way
by discussing them as the result of the application of different phono-
logical rules.

2.6.5.1. Phonetically long vowels, as opposed to the underlyingly
long vowels, may appear in normal and mostly informal speech as a result
of the deletion of an underlying [+cns, +bk, +vce] stop or the glottal
stop or fricative, i.e., /g ʔ h/ by the application of the following
rule of consonant deletion and vowel lengthening (VL).

$$(\text{VL}) \quad [+\text{syl}] \begin{bmatrix} +\text{cns} \\ \begin{Bmatrix} \begin{bmatrix} +\text{bk} \\ +\text{vce} \\ -\text{cnt} \end{bmatrix} \\ [+\text{lo}] \end{Bmatrix} \end{bmatrix} \quad [-\text{syl}] \Rightarrow \begin{bmatrix} +\text{syl} \\ +\text{lng} \end{bmatrix} \quad \emptyset \quad (\text{normal and informal styles})$$

$$\qquad\quad 1 \qquad\qquad 2 \qquad\qquad 3 \qquad\qquad 1 \qquad 2 \qquad 3$$

This rule lengthens the vowel preceding the consonants /g ʔ h/ by
deleting these segments, e.g., in [ōlan] < /oglan/ 'boy', [būda] < /bugda/
'wheat', [tēran] < /tehran/ Teheran, [tǣlīm] < [tæhlīm] < /tæʔlīm/ < Arabic
taṣlīm 'teaching', [tǣsir] < /tæʔsīr/ < Arabic taʔthīr 'effect', etc..

2.6.5.2. The diphthongs in Tabriz speech are [ow] and [öw], which

as already mentioned (note 6), are formed by the change of the postvocalic

/v/ to [w/w̌] followed by the labialization of the vowel preceding the [w/w̌],

by the following rule:

$$\text{(Diph)} \begin{bmatrix} +syl \\ \propto bk \\ -hi \end{bmatrix} \quad v \quad \begin{Bmatrix} [-syl] \\ \# \end{Bmatrix} \Rightarrow [+rnd] \begin{bmatrix} -cns \\ -ant \\ +hi \\ +rnd \\ \propto bk \end{bmatrix}$$

$$\quad 1 \qquad 2 \qquad 3 \qquad\qquad 1 \qquad 2 \qquad 3$$

Note that the feature [-hi] in the vowel preceding the [v] is to

exclude the application of this rule to words with high vowels preceding

the [v], e.g., [gɨvrɨx] 'curly.'

This rule accounts for the following examples: [ow]< /av/ ov̲ 'game',

[buxow]</buxav/ buxov̲ 'fetters', [dowšan]< /davšan/ dovšan̲ 'rabbit',

[bilöw]</bilev/ bilov̲ 'whetstone', [töw̌læ]</tævlæ/ tövlä̲ 'stable'<

Arabic taw̄īla, [bænöw̌šæ]< bæ næ všæ < /bæ næ fše/< Persian bänäfše̲

'violet.'

2.6.5.3. Vowel sequences are formed in Tabriz speech by the

deletion of (1) [g̃], (2) [w̌w] derived from the underlying /g g̃/, /v/,

/j/ from between flanking vowels of the same specifications for backness,

roundness and length, by the following rule:

$$\begin{bmatrix} -syl \\ \begin{Bmatrix} \begin{bmatrix} -cns \\ \propto bk \\ \beta rnd \end{bmatrix} \\ \begin{bmatrix} +bk \\ +cnt \\ +vce \end{bmatrix} \end{Bmatrix} \end{bmatrix} \rightarrow \emptyset \ / \begin{bmatrix} +syl \\ \propto bk \\ \beta rnd \\ -lng \end{bmatrix} \quad - \quad \begin{bmatrix} +syl \\ \propto bk \\ \beta rnd \\ -lng \end{bmatrix}$$

This rule accounts for the formation of the vowel sequence as a

result of the deletion of [w̌ w g̃] in the following examples: [söüt]<

söw̌üt < söjüt</sögüd/ söyüd̲ 'willow', [toux]< towux< tawux< tag̃ux<

/tagug/ toyug 'hen', [šúut]< šuwut< šiwid< šivid< /šivīd/ < Persian
ševīd 'dill weed', [g̃öül]< göwul< [könül]</köŋül/ könül 'heart, mind',
[böüx̃]< böwüx̃ </böjük/ böyük 'great'.

2.6.6. Shirāliyev also explains the nature of the so-called short
vowels in Azerbaijani. According to Shirāliyev (1) short vowels are
closed vowels (i.e., /i/, /ɨ/, /ü/, /u/), (2) they are produced in the
unstressed syllable which is (a) the first syllable of the word (because
Azerbaijani words almost always are stressed on the last syllable, see
4.2), e.g., [picáx] 'knife', [gɨšdá] 'in winter', (b) the stem's last
syllable from which stress has shifted to a suffix, e.g., [g̃ǽldiláẽr]<
/gǽl+di+lar/ 'they came', [ǽlimǽ]< /ǽlim+a/ 'to my hand'.

2.6.7. Shirāliyev's discussion of vowels is followed by important
facts about vowel changes in different dialects of Azerbaijani.

2.6.8. Before examining Shirāliyev's treatment of the Azerbaijani
consonants, we may mention an additional point about vowels in his
analysis. Nasal vowels, according to Shirāliyev, constitute a widespread
feature of Azerbaijani dialects in contradistinction to some Turkic
languages (pp. 31-32). Nasal vowels, in those dialects of Azerbaijani
which have them, have historically been developed from velar nasals by
gradual deletion of the velar nasal after it has nasalized the vowels
preceding and following it. E.g., [mãã], [ǽlɨ̃ɨ], [aldɨ̃ɨz] in Nakha dialect,
must have come from /maŋa/ 'to me', /ǽlɨŋɨ/ 'thy hand', /aldɨŋɨz/ 'you
acquired', respectively (Shirāliyev, 1967:76-7).[17]

2.6.9. Shirāliyev treats those consonants which are found in the
nonliterary dialects of Azerbaijani. Among these are the voiced and
voiceless dental affricates [ʒ] and [c] which are also found in Tabriz
speech. Of interest to us is that Shirāliyev, too, considers [c] and

[ǯ] as counterparts of [č] and [ǰ] found in many dialects of Azerbaijani
including the literary dialect. We argue in the next chapter that the
Tabriz [c ǯ] are underlyingly /č ǰ/. This relationship between [c ǯ] and
/č ǰ/ may exist not only in all Azerbaijani dialects with [c ǯ], but also
in all Turkic languages with [c ǯ].

2.6.10. It is noteworthy that according to Shiräliyev, the lack of
the voiceless velar stop and its substitution (in the nativized loans)
with the voiced velar stop or the voiceless velar fricative is considered
characteristic of Azerbaijani. Nevertheless, along with its existence in
some unassimilated loanwords, the voiceless velar stop, which does exist
in the majority of Turkic languages, can be encountered in the Western
dialects of Azerbaijani, as well as in the Zagatala-Gakh dialects; in the
latter the voiceless velar stop usually occurs in place of the voiceless
palatal stop of other dialects of Azerbaijani, e.g., [kor]</kor/ (Tabriz
[c̊or]) 'blind', [kaǥɨz]</kaǥɨz/ (Tabriz [c̊aǥaz]) 'paper', [komak]<
/kömæk/ (Tabriz [c̊ömæɟ̊])[18] 'help', [okuz]</öküz/ (Tabriz [öɟ̊üz]) 'ox',
[jeka]</jekæ/ (Tabriz [jeɟ̂æ]) 'big', [inak]</inæk/ (Tabriz [inæɟ̊s])
'cow', etc. in the Zagatala-Gakh dialect and [kɨš]</gɨš/ 'winter', [kɨfɨl]
</gɨfɨl/ 'lock', [kuš]</guš/ 'bird' in the Western dialects (Shiräliyev,
1967:75).

2.6.11. After the section on consonants Shiräliyev provides a
description of the changes of consonants in Azerbaijani. Although few
of these are reflected in Tabriz speech, awareness of their existence is
valuable because they provide for broader generalizations about consonant
changes in Azerbaijani in general.[19]

2.6.12. _Summary_. One linguist (Akhundov) assigns 14 vowels, 2
diphthong vowels, and 25 consonants to Azerbaijani. The majority of the

linguists, whose analyses were examined, find nine vowels and 23 to 24 consonant phonemes plus 3 segments of phonemic status in Azerbaijani.

The following segment chart can be deduced from the study of the analyses of the other five linguists:

Consonants:

p	t	k′	(k)	(ʔ)	
b	d	g′	g		
f	s	š	(x′)	x	h
v	z	ž	j	g�099	
		č			
		ǰ			
m	n				
	l				
	r				

As it will be argued in the next chapter, the above consonants, except for [k̄], [g], [x̄] and [g̣], are underlying segments in this study.

Vowels:

i	ü	ɨ	u
e	ö		o
æ		a	

2.6.13. The foregoing review was intended to show the stage at which Azerbaijani phonology rests. The phonemic framework employed by the five linguists whose analysis of a particular dialect of Azerbaijani we examined seems to have left areas in need of a more convincing treatment. The following chapters attempt to present these unconvincing areas (such as the status of some segments considered 'phonemes' in the phonemic framework utilized in Azerbaijani phonology) in the light of generative phonology. Other points to be treated are the almost untouched question

of the status of 4 segments in Tabriz speech ([c ʒ β̃ β̰̃]) as characteristic

of one group of Azerbaijani dialects versus another group of Azerbaijani

dialects; a presentation of Azerbaijani phonological rules; and the process

of nativization in Azerbaijani, mainly as the product of the native

Azerbaijani rules applying to loanwords.

Notes

[1] Moran 1945 cites câm [ǰam] '(wine-) glass, cup' as (obs.). If this word is obsolete then our [ǰam] vs. [ẙam] contrast does not exist. Similarly, perhaps a [fenā] 'dissolution' vs. [fena] 'bad' contrast does not exist because fenā [fenā], too, is labeled (rare) in Moran.

[2] According to Shiräliyev (1967:42-3), we find initial [ɨ] (i.e., in initial syllable), mainly in Western Azerbaijani dialects though it is encountered also in Mughan, Julfa, Zagatala and Gakh speeches as well. E.g., [ɨldɨrɨm] 'thunderbolt' (Gazakh, Julfa, Sabirabad-Gasɨmbayli, Zagatala-Ashaghɨ Tala), [ɨšɨx] 'light' (Gazakh, Julfa, Sabirabad-Gasɨmbayli, Gakh), [ɨlxɨ] 'herd' (Gazakh, Julfa), [jɨlxɨ] 'herd' (Sabirabad-Gasɨmbayli, Gakh-Ilisu, Gakh-Güllük), [ɨldɨz] 'star' [[ulduz] in Tabriz and many other places. H.S.] (Gazakh, Julfa), etc. Shiräliyev further observes that this phenomenon is even more frequently seen in Turkmen, Tuvin and Turkish.

[3] According to Dämirchizadä, however, in some dialects of Azerbaijani the mid vowel [ö] occurs in the second and third syllables as well, e.g., [görsöz] 'if you see', [öjdödü] 'is at home' (in Baku), [görörüm] 'I see', [göröjsün] 'thou seest' (in Ayrɨm), [görör] 'sees' (in Gazakh), etc., (Dämirchizadä, 1972:56).

[4] The page and line references are to Kashghari 1072-3, Vol. I. The first number refers to page and the number after the hyphen to the line.

[5] The translator of Kashghari's work, following the Turkish practice of interpreting the Arabic letter ق as K̲ (i.e. voiceless velar stop), has recorded the words for 'hoar-frost' and 'fetters' with K̲, i.e., kɨragu and bukagu. The Arabic ق is interpreted as g (i.e. voiced velar stop) by many Turkic speakers including the Azerbaijanis.

[6] Since the earlier forms for the words 'calf', etc. are somewhat too different from their synchronic surface forms, it seems better to posit underlying forms with /v/ for such words, e.g., /bɨzav/ etc. In this way we can do without a rule that has more historical value than synchronic, and the surface form [bizow] etc. can be derived by the same rule that derives [ow]< /av/ 'game', [dowšan]< /davšan/ 'rabbit', [bænöwšæ] (< [bænævše])< /bænæfše/ 'violet' etc.

The rule that can account for all these derivations is the rule of

diphthongization in the Tabriz dialect:

$$
\begin{bmatrix} +syl \\ \alpha\,bk \end{bmatrix} \quad v \quad \left\{ \begin{array}{c} [-syl] \\ \# \end{array} \right\} \Rightarrow \begin{bmatrix} +rnd \\ -lo \end{bmatrix} \begin{bmatrix} -cns \\ -ant \\ +hi \\ \alpha\,bk \\ +rnd \end{bmatrix}
$$

1	2	3	1	2	3

[7]According to Baitchura 1975, Turkic languages fall into two groups with respect to the phonological significance of vowel length: (a) those in which vowel-length is phonemic as in Turkmen, Khakas, Yakut, etc., (b) those in which vowel length is nonphonemic, as in 'Kazan-Tatar, Mishar-Tatar, Mountain-Bashkir (proper), Ufa-Bashkir (or Lowland-Bashkir which is in reality part of Kazan-Tatar, Kazakh, Azerbaijani, and Chuvash' (88). In the latter group of the Turkic languages vowel-length is significant only from the viewpoint of instrumental phonetics. Here, generally speaking, low and mid vowels are longer than the high vowels 'at an average ratio of 2:1 in the corresponding position,' e.g., in Kazakh the length of [a] in [at] 'horse' is 38.8 S. (S = .1 sigma = 0,01 second or 10,0 milliseconds), whereas the length of [i] in [it] 'dog' is 18.3 S. (89). Nevertheless, in connection with stress this ratio is reversed, e.g., the length of [ɨ] in stressed position in [atɨ] 'his horse' is 24.7 S., whereas the length of [a] in the same word is 12.0 S. (91).

However, the fact that vowel length is nonphonemic in Azerbaijani need not mean that underlying long vowels may not be posited. (For motivation of long underlying vowels see 3.10.2.3 and 3.10.2.4.)

[8]I have heard final [k̂] in Southern Azerbaijan, and the following, too, can be found in the dialects of Northern Azerbaijani. Page references are to Shiräliyev (1967): ‚Aghdaš region dialects: [görǣk] 'let us see' 378; Baku dialect: [görǣk] 'let us see' 362, [k̂ǣklik̂lǣr] 'quails' 362, ‚ [cǣk̂dig] 'we drew' 363; Göyčay region: [gǣšǣk] 'pretty' 377, [elǣmǣrik] 'we don't do' 377, [elijǣk̂] 'let us do' 377, [böjük] 'great' 377; Märzä region dialects: [gedǣk] 'let usgo' 370, [görjǣk̂] 'upon seeing' 370, [gǣrǣk̂] 'must' 370; Mughan dialects: [k̂ičik̂] 'small' 371, [gedǣk̂] 'let us go' 374, [čörǣk̂] 'bread' 370, [aѕbirčǣk̂] 'white haired woman'; Nakhchïvan dialect: [ǣpbǣk̂] 'bread' 401; Shahbuz region dialects: [gedǣk̂] 'let us go' 403.

According to a Southern Azerbaijani speaker, in Khalkhal speech there is final k [k̂], e.g., [čörǣk̂] 'bread', [inǣk̂] 'cow'. Interestingly, the final [k̂], in this dialect, apparently is neither voiced, nor spirantized. The informant was a Tabrizi speaker of Azerbaijani.

[9]Shiräliyev employs '−' 'ˇ' 'ˆ' 'ɨ' 'i' above a segment to designate it as lengthened, shortened, nasalized, unrounded, and fronted, respectively. And he employs '<' under a segment to designate its backness.

[10]Shiräliyev quotes the first four examples from: Ashmarin, N.I. 1926. Obshchij obzor narodnïkh tjurkskikh govorov gor. Nukhi. Baku; and he quotes the second three examples from Dzhangizadä, V.T. 1956. Osobennosti Dmanskogo govora azerbajdzhanskogo jazyka. Baku.

[11]Shiräliyev employs '◡' under a segment to show that it does not constitute a syllable.

[12]The pronunciations [sǣr], [šǣr], [sāt] do not represent Tabriz speech. The fact that such nativized loans, in Tabriz speech, have sequences of vowels rather than single long vowels has already been argued for (see 2.4.4.1-4). I find [sæhæ̣r]~[sæ ær] 'morning', and [šæhr] 'city' in my speech, and I think I have heard [šæhæ̣r]~[šæ ær] from other Tabrizi speakers of Azerbaijani. The derivation of [sæ ær]< Arabic sabar 'morning' and [šæ ær]< Persian šähr 'city' would be:

	/sæhæ̣r/	/šæhr/
(i-ep)(4.7.6)		i
(HH)(P114)		æ
(Glt-WK)(4.7.4)	∅	∅
	[sæ ær]	[šæ ær]

[13]According to Shiräliyev (p. 36) 'In the fully-falling diphthongs even if the second vowel is not 'fuller' [i.e., more sonorant H.S.] than the first vowel, the former preserves its characteristic.'

One wonders if this does not indicate that there are two distinct vowels rather than a diphthong at issue.

[14]According to Shiräliyev (p. 37) in the half-falling diphthongs, the second 'sound,' usually derived from [v] or [j], is pronounced very weakly, hence in phonetic transcription it is written above the level of the first vowel.

[15]Shiräliyev (pp. 37-8) observes that in the rising diphthongs the first 'sound' is weak whereas the second sound is 'fuller' (i.e. more sonorant) owing to the fact that the second sound is open whereas the first sound is closed or half-open.

[16]The words for 'tarantula,' 'for hunting,' 'to home,' etc. seem to be bisyllabic in Tabriz speech. As the following derivations show, in Tabriz speech the -VCV- part in the underlying representations of these words surface as -VGV-:

	'tarantula'	'for hunting'	'to home'
	/büvæ/	/av+a/	/öv+a/
(Diph)(2.6.5.2)	ẉ	ow	ẉ
(SVH)(4.1.1)			æ
	[büẉæ]	[owa]	[öwæ]

[17]The forms /maŋa/ 'to me', /æ liŋi̇/ 'thy hand', /aldiŋi̇z/ 'you acquired', etc., apparently do have nasal velar (palatal) in pronunciation, e.g., in the Gazakh dialect, a member of Western Azerbaijani dialects (Shiräliyev, 1967:76-7).

Shiräliyev's concise discussion of the development of the nasal vowels in Azerbaijani dialects is set in a concise illuminating context of the development of the velar (palatal) nasals, and the original forms which gave rise, among other developments, to the development of the velar (palatal) nasals, themselves.

According to Shiräliyev, on the basis of the earlier Turkic works, the velar nasal present in the Western group of Azerbaijani dialects, was in the form of the compounds ng, ŋg, ńǵ. To this effect Shiräliyev cites the following examples from earlier Turkic works as well as Azerbaijani classics: [maṅga] 'to me' (Kashghari I, 20-16), [saṅga] 'to thee' (Ibid. 391-18), [soṅguk] 'end' (Ibid. III, 45-27; the [ǵ] employed in Kashghari's translation is the voiced palatal stop which we represent by /ǵ/); [oṅga] 'to him' in Bakïkhanov, A. [no date, place or page reference] Kitabi-Äsgäriyyä; [jeṅǵijæ] 'recently', in Akhundov, M.F. [no date]. Works vol. III:164; [soṅgra] 'after' in Kazïmbäy [no date]. Därbändnamä, p. 248. To these Shiräliyev adds the following words from contemporary Azerbaijani dialects: [soṅgra] 'after' (The Guba dialect); [doṅguz] 'pig' (The Mughan group of speeches and the Nukha dialect); [doṅgar] 'hunched' (in the form of [doṅar] in the Nakhchïvan dialect).

With this background of the existence of -ńǵ-, -ṅg- in earlier Turkic works, the Azerbaijani classics, and contemporary Azerbaijani dialects, Shiräliyev finds that the compound underlying forms, in his words, 'have gradually been analyzed into their component segments; in one group of dialects the [ŋ] sound has prevailed, in another group of dialects the sounds [g, g̣, ǵ]' (Shiräliyev, 1967:76).

Another important point is that according to Shiräliyev (p. 76):

> The sound [g] has changed to [v] in some dialects,
> and to [j], as a result of softening, in other
> dialects. This process may thus be illustrated:

ng, ŋg, ńǵ

ŋ   g̣

Western dialects and speeches [maŋa] 'to me', [soŋra] 'after'	[maga] 'to me' (Zagatala-Gakh speech), [sogra] 'after' (in the speech of the Füzuli region), [otagïz] (Jäbrayïl), [ælijiz] 'your hand' (Yerevan), [mæjæ] 'to me' (the Shamakhï dialect), [næ növ] 'thy mother' (The Zagatala-Gakh, Guba and Southern Azerbaijani dialects and speeches.)

I wonder if [otagïz] above means [atanïz] 'your father' (literary) and [atuz] 'your father' (Tabriz). But if the word [otagïz] means 'your room', it is not a suitable example to show the ng→ g̣ change, because in the underlying /otag+ung+uz/ the first /g/, too, can change to [g̣], in which case the [otagïz] example will not illustrate the ng→ g̣ change.

Concerning [næ növ] above, too, it is to be noted that Southern Azerbaijani does not include the Tabriz dialect because the word for

'thy mother' is not [næ növ] but it is [næ nün] in Tabriz.

With regard to the existence of the velar nasal, Shirāliyev groups Azerbaijani dialects into three groups: (a) the group which includes the Eastern dialects where the velar nasal is not used, (b) the group which includes the Western dialects where the velar nasal is widely used, (c) the group which includes the Nukha, Zagatala-Gakh, Nakhchivan, and Ordubad dialects where the velar nasal having nasalized the adjacent vowels has been gradually deleted.

When we examine the Tabriz dialect in the light of the above description we find that it falls within the group (a) where the velar nasal is not employed, except in a few words like [daŋgaz] _daŋgaz_ 'obstinate', [baŋka] < Russian _banka_ 'jar', by nasal assimilation.

The Tabriz dialect and the literary dialect seem to belong to the group of Azerbaijani dialects which have lost the palatal/velar segment in the earlier [-ng-, -ng-, -ng-] sequences in the majority of the cases.

[18]In normal and informal speech [ǧ] word-finally and preconsonantally is [x].

[19]E.g., the rule of spirantization of the stops (to be discussed in Chapter 4 along with other rules) apparently applies only to [k g] and /g/ in Tabriz speech, whereas Shirāliyev's treatment of consonant changes in different dialects of Azerbaijani shows that spirantization applies even to bilabial stops, e.g., [kitaf] (Gazakh, Gänjä, Garabagh, Nukha, Shahbuz) versus [ǧitap] (Tabriz) < Arabic _kitab_ 'book'; [bošgaf] (Gazakh, Gänjä, Garabagh, Nukha) vs. [bošgap] (Tabriz) </bošgab/ 'plate'. This change which according to Shirāliyev occurs in Northern and Western dialects of Azerbaijani, follows the same rule that accounts for the spirantization of palatal and velar stops in many other dialects of Azerbaijani, including Tabriz speech. Thus a general rule of spirantization in Azerbaijani should cover all stops and affricates. Such a rule is readily deducible from Northern and Western dialects of Azerbaijani. In sum, while in certain dialects of Azerbaijani like the Tabriz dialect only affricates and high stops undergo spirantization, in many other dialects of Azerbaijani the rule of spirantization applies to all the stops and affricates.

Similarly, devoicing in Azerbaijani in general is broader than that reflected in Tabriz speech. E.g., [uldus] (Gazakh, Mughan) vs. [ulduz] (Tabriz) _ulduz_ 'star'; [doggus] (Gazakh, Mughan, Norashen-Givrag) vs. [dokguz] (Tabriz) _dogguz_ 'nine'; [sækkis] (Norashen-Givrag) vs. [sækkiz] (Tabriz) _säkkiz_ 'eight.'

Tabriz speech appears to be among those which seem to have a rule of voicing the word-final voiceless alveolar fricative /s/. We see the operation of this voicing rule in Tabriz speech in such words as [araz] < Persian _aras_ 'The Araks river', [æ tlæ z] < Arabic _aṭlas_ 'silk satin', [xoruz]< Persian _xurus_ 'rooster', [næ rǧiz]< Persian _närges_. In other Azerbaijani dialects the /s/ in the cited words is not voiced, e.g., [aras], [atlas] (Gazakh), [xorus] (Gazakh, Mughan). But there are also instances where the /s/ does not undergo voicing in Tabriz speech while ·

it does in other dialects, e.g., [ælmas] < Arabic <u>almās</u> 'diamond' in
Tabriz vs. [almaz] in the Northern literary dialect.

CHAPTER III

AZERBAIJANI PHONOLOGICAL SEGMENTS

3.1 In this chapter the underlying segments of Azerbaijani are presented.

In Turkic languages, including Azerbaijani, there is a relationship between the high consonants and the vowels. Some high consonants occur with front vowels and some with back vowels. In the following paragraphs we examine two approaches utilizing this relationship for positing two rather than four high, noncontinuant, nonstrident segments for Azerbaijani.

3.1.1 It is possible to posit the deepest morphophonemic representations of |K G|, which will not be fully specified in the lexicon, to derive the Tabriz [č̑ ǰ̑ k g] and Baku [k̑ ǵ k g] as can be seen in section 3.2. But in the derivation of [č̑ ǰ̑ k g]/[k̑ ǵ k g] (which corresponds to Schane's (1971) phonetic level) from |K G| (which corresponds to Schane's morphophonemic level) there is also the intermediate stage /k̑ ǵ k g/ (which corresponds to Schane's phonemic level). In other words, we may assume a derivation like |K G|>/k̑ ǵ k g/>[k̑ ǵ k g]/[č̑ ǰ̑ k g].

3.2. Attention to the environment of the alveopalatal retroflex affricate [č̑ ǰ̑] in Tabriz speech (and the palatal stops [k̑ ǵ] in many other dialects of Azerbaijani, e.g., the Baku dialect) on the one hand and the velar [k g] on the other hand seems to indicate that despite the surface difference, both the nonvelar, i.e., [č̑ ǰ̑]/[k̑ ǵ] and the velar [k g] are derivable from a pair of underlying [+cns,-syl,+hi,-cnt,-strid] segments.

61

3.2.1. The derivability of both the nonvelar [k̂ĝ]/[k̆′ ğ] and the
velar [k g] from the underlying [+cns,-syl,+hi,-cnt,-strid] segments |K G|
is based on the fact that the nonvelar [k̂ĝ]/[k̆′ ğ] occur in the environ-
ment of the front vowels, and the velar [k g] occur in the environment
of the back vowels. In Azerbaijani as a Turkic language the occurrence
of the alveopalatal retroflex affricates/palatal stops with the front
vowels and the velar stops with the back vowels is linguistically signi-
ficant. The significance is that words otherwise segmentally identical
can differ in meaning owing to their difference in having the nonvelar
[k̂ĝ]/[k̆′ ğ] with front vowels or the velar [k g] with the back vowels.
E.g., while they share the pattern

$$
\begin{bmatrix} v \\ [+lo] \end{bmatrix} r
\begin{bmatrix} +cns \\ -syl \\ +hi \\ -cnt \\ -strid \end{bmatrix}
\begin{bmatrix} v \\ +hi \\ -rnd \end{bmatrix} n \Big],
$$

the words [ær ğ in]/ærğin] 'melted' and [argɨn] 'feeble' differ in that
[ær rğin]/[ærğin] has front vowels and a nonvelar consonant, and [argɨn]
has back vowels with a velar consonant.

3.2.2. This phenomenon is known as synharmony. In Trubetzkoy's
(1969:285) words, 'synharmony consists in that each word in a particular
language can either contain only front vowels and palatalized consonants
or only back vowels and velarized consonants.'

3.2.3. Synharmony may be formulated as:

$$
(s) \begin{bmatrix} +cns \\ -syl \\ +hi \\ -cnt \\ -strid \end{bmatrix}
\rightarrow [\alpha bk]/ \begin{bmatrix} +syl \\ \alpha bk \end{bmatrix}
$$

This means that the high, nonstrident consonants (i.e., |K G|) in their
feature for backness/frontness agree with the vowel preceding or follow-

ing them. (S) contains Bach's (1968) 'neighborhood convention' and thus represents the collapsing of two rules (a) and (b):

$$\text{(a)} \begin{bmatrix} +cns \\ -syl \\ +hi \\ -cnt \\ -strid \end{bmatrix} \rightarrow [\propto bk] \ / \ \begin{bmatrix} +syl \\ \propto bk \end{bmatrix} (c)\text{---}$$

3.2.4. Rule (a) shows that the high, nonstrident consonants |K G| agree in the feature for backness/frontness with the preceding vowel. This rule applies in [ae͡jmae] </aé͡gmae / < |ae͡Gmae| 'arc', [oglan] </oglan/ < |oGlan| 'boy', [ae rix́] </ae rik/< |ae riK| 'apricot', [arɨ̇x] </arɨ̇g/ < |arɨ̇G| 'lean', [acɨ̇x] </ac͡ɨg/< |ac͡ɨG| 'open', [itix́] </it+ik/< |it+iK| 'lost'.

$$\text{(b)} \begin{bmatrix} +cns \\ -syl \\ +hi \\ -cnt \\ -strid \end{bmatrix} \rightarrow [\propto bk] \ / \ \text{---}(c) \begin{bmatrix} +syl \\ \propto bk \end{bmatrix}$$

3.2.5. Rule (b) states that the high nonstrident consonants, i.e., |K G| agree in the feature for backness/frontness with the following vowel, e.g., [g̈öl] < /g̈öl/< |Göl| 'pond', [gol] </gol/< |Gol| 'arm', [k̈ül] </k̈ül/< |Kul| 'ash', [kuran] </kuran/< |Kuran| < French _Courant_ 'current, draught', [ver͡gi] </ver+ǵi/< |ver+Gi| 'gift, tax', [algi]< /al+gɨ̇/< |al+Gɨ̇| 'purchase, perception, prize.'

3.2.6. It should be mentioned, however, that synharmony is not exceptionless. Synharmony is not observed in a handful of native words as well as a considerable number of loanwords. E.g., we find native words like [gae rdae š] 'brother', [gejin] 'brother-in-law', [gae miš] 'reed', [gae ʒae lae]/[gae ǰae lae]² 'magpie', [k̈ol-k̈os]/[kol-kos]² 'undergrowth', [ti k̈an]/[tikan] 'thorn' where a voiced velar stop occurs in the environment of a front vowel or an alveopalatal retroflex affricate/palatal stop occurs in the environment of a back vowel. Similarly, we

encounter numerous loanwords like [gæʔlb] < Arabic qalb 'heart' and

[ǰasa]/[k̂asa] < Persian kāse 'bowl' where as in the case of the native

examples just cited, a voiced velar stop occurs with front vowels and

an alveopalatal retroflex/palatal stop occurs with back vowels.

3.2.7. Yet, perhaps with the exception of a few native words like

[gæʒælæ]/[gæǰælæ] 'magpie', [k̂ol-ǰos]/[k̂ol-k̂os] 'undergrowth',

etc., where the reason for the lack of synharmony is not clear, it seems

that the other exceptions to synharmony can be explained or at least

defined. In some cases it can be shown that a particular exception to

synharmony is only superficially so, because underlyingly the word con-

forms to synharmony, e.g., the word [gærdæš] 'brother' in many dialects,

including the literary dialect, is [gardaš] and underlyingly, too,

/gardaš/. Furthermore, in a particular dialect, as in the Tabriz dia-

lect, an exception to synharmony may have a clear phonological reason

such as the raising and fronting of the vowels in the environment of

the voiced palatal fricative as in [gejin] gayɨn[4] 'brother-in-law', where

the lack of synharmony results from the raising and fronting of the /a/

preceding the /j/ and the fronting of the /ɨ/ in /gajɨn/. The lack of

synharmony may also result from partial nativization as in [ǰasa]/[k̂asa]

< Persian kāse 'bowl' where although the velar stop has changed to the

alveopalatal retroflex affricate/palatal stop the vowels are back, or as

in [gæʔlb] < Arabic qalb 'heart' where nativization has not advanced be-

yond changing the Arabic uvular stop /q/ to the Azerbaijani voiced velar

stop /g/, and the Arabic low central vowel /a/ to the Azerbaijani low

front vowel /æ/.[5]

3.2.8. Thus, presently it seems that exceptions to the rule of

synharmony are confined to the partially nativized loans and the few

native words with not fully clear underlying representations. Upon the recognition of the underlying forms of the native 'exceptions' and the rule(s) responsible for the lack of synharmony in them, the exception to synharmony will be restricted to the loanwords lacking synharmony. Considering, however, that loans, too, form a definable class, with rule-governed, hence predictable, distance from the expected synharmony, they, too, will hardly deserve the label 'exceptions.'

3.2.9. Nevertheless, even after it is established that the apparent exceptions are fully explainable, it will be necessary somehow to differentiate the synharmonic words from the superficially unsynharmonic ones. To this end, it can be assumed that in the spirit of Lightner's (1965) proposal, each root is marked for the abstract feature [+BACK]/ [-BACK] which specifies the participation of both the vowels and the [+cns,-syl,+hi,-cnt,-strid], i.e., the |K G| segments in synharmony by a rule like:

$$
\left\{ \begin{array}{c} [+\text{syl}] \\ \left[\begin{array}{c} +\text{cns} \\ -\text{syl} \\ +\text{hi} \\ -\text{cnt} \\ -\text{strid} \end{array} \right] \end{array} \right\} \rightarrow [\propto \text{bk}] \ / \ \ [\propto \text{BACK}]
$$

3.2.10. This rule modeled on a similar rule by Lightner for 'vowel and consonant harmony' (i.e., synharmony) in classical Mongolian, states that the backness/frontness of the vowels and the [+cns,-syl,+hi,-cnt, -strid], i.e., |K G| segments in a word is determined by the abstract feature [+BACK]/[-BACK] which is an idiosyncratic property of each root (Lightner 1965:247-8).

However, the abstract root marking solution does not seem to account for the facts quite plausibly. First, it fails to reflect the fact that synharmony is largely dependent on vowel harmony, whereas the root marking solution determines backness for both vowels and [+cns,

-syl,+hi,-cnt,-strid] segments simultaneously. Secondly, the abstract
root marking solution by leaving segments unspecified for backness is
rejected by the theory of markedness which requires full feature speci-
fication of the underlying segments.

The inadequacy of the abstract root marking solution can be seen
once we notice the independence of the vowel harmony and the dependence
of synharmony on vowel harmony. The independence of vowel harmony is
reflected in pairs like [darɨ] 'millet' (in Tabriz [dari] by (3.11.2.1.3))
and [dæri] 'skin'; [sɨnmax] 'to be broken' and [sinmæx́] 'to be absorbed'
(Tabriz [sinmax]); [uzun] 'long' and [üzün] 'thy face'; [olumsuz] 'nega-
tive' and [ölümsüz] 'deathless'. As such examples show, since vowel
harmony obtains independently, i.e., since both back and front vowels do
occur with nonhigh consonants, in other words, since the backness fea-
fure in vowels is not conditioned by the nonhigh consonants in morphemes,
then in the morphemes with high consonants, too, vowels must be indepen-
dently back/front. E.g., by this reasoning, just as in [darɨ] 'millet'
and [dæri] 'skin', etc., the vowels are back/front independently of the
consonants in the morphemes, the vowels in [gol] 'arm' and [gö́l]/[ǵöl]
'lake', too, must be back/front independently of the high consonants [g]
and [ǵ]. This means that backness/frontness of vowels in morphemes is
independent of the backness/frontness influence of the consonants. How-
ever, since in words like [gol] 'arm', [gö́l]/[ǵöl] 'lake' there exists,
between the vowels and consonants backness/frontness harmony (i.e., syn-
harmony), we may conceive of this phonologically significant synharmony
as the assimilation of the high stops to the vowels in the feature for
backness. In this case vowels must be fully specified for every feature.
This is already superior to the abstract root marking solution which

accounts for the feature backness in both the vowels and high consonants of a morpheme by an abstract feature [+BACK]/[-BACK]. The superiority of the full specification of vowels over the abstract root marking solution is that the former is based on phonological facts (as discussed above in this paragraph) whereas in the abstract root marking solution the mechanism is nonphonological. In this respect Kiparsky's observations about the feature GRAVE employed by Lightner (1965) is noteworthy. Kiparsky observes that the abstract feature GRAVE is not a phonological feature, rather, it is an abstract feature which is mapped onto the phonological feature [±back]. According to Kiparsky 'the [phonological] theory expresses no connection between the abstract feature GRAVE and the corresponding phonological feature, apart from the purely arbitrary one contained in the mapping rule of vowel harmony' (41).

Nevertheless, full specification of the vowels is not sufficient. In accordance with the theory of markedness, the high consonants, too, like any other segment appearing in the underlying representation should be fully specified.

The specification of the high consonants can be in one of the following two ways. First, the recognition of a pair of [+hi, -bk, -cnt, -strid] consonants (i.c., the palatal /ḱ ǵ/) and another pair of [+hi, +bk, -cnt, -strid] consonants (i.e., the velar /k g/). This is the traditional solution which for its neglect of synharmony is not employed in this study.

As already mentioned, since synharmony results from the backness assimilation of the high stops to the nearby vowel, it is possible to posit one pair of fully specified underlying high stops, i.e., either [+hi, +bk, -cnt, -strid] or [+hi, -bk, -cnt, -strid] and derive the other

pair by assimilation in the word. This constitutes the second approach
to the full specification of the high stops. Here the relevant question
is this: which pair should the fully specified underlying high stops
be? Should it be the palatal /k̑ g̑/ or the velar /k g/? The answer is
that according to the theory of markedness velar stops are less highly
marked, i.e., more expected than the palatal stops. Hence the velar
stops /k g/ can be posited as underlying high stops in Azerbaijani.

   3.2.11. These underlying velar /k g/ will surface by the follow-
ing rule of the realization of the velar stops (RVS):

$$
\text{(RVS)} \begin{bmatrix} +cns \\ +bk \\ -cnt \\ \langle +vce \rangle \end{bmatrix} \rightarrow [-bk] \; / \; \left\langle \begin{bmatrix} +syl \\ -bk \end{bmatrix} \right\rangle
$$

   This rule is a collapsed form of the following two rules. One of
them is the context free voiceless velar stop fronting (VSF):[6]

$$
\text{(VSF)} \begin{bmatrix} +cns \\ +bk \\ -cnt \\ -vce \end{bmatrix} \rightarrow [-bk]
$$

which says that in Azerbaijani dialects in all environments the voice-
less velar stop is realized as the voiceless palatal stop.[7]

   The other rule is that of voiced velar stop synharmony (VSS):

$$
\text{(VSS)} \begin{bmatrix} +cns \\ +bk \\ -cnt \\ +vce \end{bmatrix} \rightarrow [-bk] \; / \; \begin{bmatrix} +syl \\ -bk \end{bmatrix}
$$

which on the basis of Bach's (1968) 'neighborhood convention' states
that the voiced velar stop is realized as the voiced palatal stop before
or after front vowels.

   In some dialects of Azerbaijani, including the Tabriz dialect the
rule of (RVS) is followed by the dialect-specific Tabriz context free

rule of (TCFR) which changes the palatal stops [k̂ ĝ] to the alveopalatal

retroflex affricates [ĉ ĵ].

The synharmonically unexpected occurrence of the velar stops with

front vowels mentioned in (3.2.6 - 3.2.8) can be accounted for by mark-

ing in the very few lexical items the unexpected high stop minus the

rule of velar stop realization, e.g., /kuran/ < French <u>courant</u> 'current,
                [-RVS]

draught', /klas/   French <u>classe</u> 'classroom', /gæ læ m/ < Arabic <u>qalam</u>
  [-RVS]   [-RVS]

'pen', /gæ ĵæ læ / 'magpie', etc.
  [-RVS]

3.2.12. The rule (RVS) is followed by the dialect specific Tabriz

context free rule of (TCFR) (which changes [k̂ ĝ] into [ĉ ĵ]):

$$
\text{(TCFR)} \quad
\begin{bmatrix}
+cns \\
-syl \\
-cnt \\
+hi \\
-bk
\end{bmatrix}
\rightarrow
\begin{bmatrix}
-hi \\
+cor \\
+strid
\end{bmatrix}
$$

3.2.13. Henceforth whenever we refer to [k̂ ĝ] and [ĉ ĵ] as the

phonetic realizations of the underlying velar /k g/, the operation of

the rule of (RVS) for the derivation of [k̂ ĝ], and the operation of the

rule of (TCFR) (3.2.12) for the derivation of [ĉ ĵ] is presupposed.

3.3. With the exception of the segments /č ĵ/ and the special

case of the relationship between the velar /k g/ and their surface forms,

largely predictable by the process of synharmony (see 3.2.1 - 11), the

underlying and surface representations of Azerbaijani consonantal seg-

ments are, to a great extent, identical. Their classificatory feature

matrices given in Table 1 below will suffice to introduce them.

3.4. <u>Explanations</u>. In addition to the points already mentioned

in chapter 2 about Azerbaijani sounds in the Tabriz dialect, it should

be noted that:

3.4.1. As can be seen from Table 3, there are two nasal segments

in Tabriz speech, a bilabial nasal [m] and an alveolar nasal [n], e.g.,
[mæn] 'I'. The alveolar nasal has dental and velar variants by way of
assimilation, as in [indi] <u>indi</u> 'now', [toŋgal] <u>tongal</u> 'bonfire', [baŋka]
<Russian <u>banka</u> 'jar'.

    3.4.2. In the environment of the front vowels the alveolar lateral
[l] is slightly palatalized and in the environment of the back vowels it
is slightly velarized.

    3.4.3. The voiceless velar stop [k] is predictable in native words
by devoicing of the voiced velar stop (see note 6); and the voiced alveo-
palatal fricative [ž] is predictable by the rule of spirantization to be
presented later. [k] and [ž] in loanwords, however, are not predictable,
hence, in these, they need to be posited as underlying segments /k/ (see
3.1) and /ž/.

    3.4.4. There is a transition segment [y] which connects a vowel-
final stem with a vowel-initial suffix (see 3.11.2.2 - 1.2).

    3.4.5. The segments [w] and [ẅ] are glides derived from /v/ after
vowels (see 2.6.5.2 - 3) or produced by the rounding of the voiced pala-
tal and velar fricative (derived from the voiced palatal and velar stops)
after round vowels (See rules (b-c), p.45, and 2.6.5.3). ([w] is also
derived from [v] </f/ after round vowels, e.g., [bæ nöẅšæ]< bæ næ všæ <
/bæ næ fše/.)

    3.4.6. The segment /r/ is a voiced alveolar flap [r] between low
vowels ([ara] 'middle', [æ ræ] 'saw') and back vowels ([ora] 'there',
[bura]~[bɨra] 'here'); a voiced alveolar flap in free variation with a
voiced alveolar fricative [ɼ] initially ([ɼæ him] 'merciful', [ɼahat]
'comfortable') and before high and mid vowels ([diɼi] 'living', [jeɼi]
'Walk!', [süɼi] 'flock'); and a voiced retroflex strident fricative [ż]

preconsonantally and word-finally ([jażpɨz] 'pennyroyal', [naż] 'pome-
granate').

3.4.7. The voiceless uvular stop of Arabic loans (ﻍ i.e. [q])
and the voiceless velar stop ([k]) of loanwords are replaced by the voiced
velar stop [g] when they are nativized in Azerbaijani.

3.4.7.1. The Arabic uvular stop which has entered the Persian seg-
ment inventory in the form of a voiced uvular stop, can be found in the
segment inventory of some (in fact very few) Azerbaijani speakers who
have been exposed to strong Persian influence since childhood. In the
speech of such individuals we find [q]~[g] in free variation.

3.4.7.2. But the voiceless velar stop has entered the segment
invertory of bilingual and polyglot Azerbaijani speakers in some loans,
e.g., [kɨlas]<French classe 'classroom', [kārɟæṛ]<Persian Kārgæṛ
'worker'.

3.4.8. In formal style glottal stop replaces the voiced pharyngeal
fricative in the Arabic loans, e.g., [sāʔæt]<Arabic sāʕat 'time, time-
piece', though in thoroughly nativized Arabic loans the glottal stop is
deleted, e.g., [saat] 'time, timepiece'. The word-initial glottal stop
and voiced pharyngeal fricative of the Arabic loans do not occur in the
Azerbaijani underlying representations.

3.4.9. In terms of symmetry, the Azerbaijani vowel chart shows a
gap because of the lack of a mid back unrounded vowel.

3.5. To return to the subject of 3.3., /č ǰ k̒ g̒/ do not surface
as such in the Tabriz dialect. The palatal stops /k̒ g̒/ surface like the
retroflex affricates [ɟ̌ ɟ̌], and the alveopalatal /č ǰ/ surface like the
dental [c ʒ] in the Tabriz dialect as well as in some dialects of Azer-
baijani. Since this difference between underlying and surface segments

is always present in Tabriz speech, we could posit /c ǰ k̂ ĝ/ as the underlying segments but there are at least two reasons which seem to favor a difference between the underlying and the surface forms:

3.5.1. First, apparently in the majority of Turkic languages and Azerbaijani dialects, the underlying segments proposed here exist as both underlying and surface representations. Furthermore, Tabriz dialect is a main dialect of Azerbaijani. Hence in order not to overlook the basic phonological relationship between the Tabriz dialect and the other dialects of Azerbaijani, it seems necessary to posit a set of underlying segments common to all Azerbaijani dialects.

3.5.2. Secondly, it seems to be more consistent with the theory of generative phonology adopted here to consider /č ǰ k g/ as part of the general Azerbaijani underlying segment inventory, and derive [c ʒ k̂ ĝ] by phonological rules acting upon the underlying segments.[8]

3.5.3. The view that [č ǰ ḱ ǵ] and [c ʒ k̂ ĝ] are phonetic representations of the same set of 'letters' č ǰ ḱ ǵ or 'phonemes' /č ǰ ḱ g/ seems to have been the tacit assumption of all the traditional phonological treatments of Azerbaijani. This apparently has been considered so obvious that few linguists have felt any need to mention it. Of those who have referred to it, Azär Hüseynov (Akhundov 1973:244) considers [c] as a variant of /č/. According to Hüseynov, [c] and [č] differ in that [c] is a fronted variant of /č/. But Akhundov himself does not agree with Hüseynov. Akhundov considers /c/ as an independent phoneme of Ordubad speech.[9] But we think when we consider the argument which Akhundov employs in calling [c] a 'phoneme', we may be able to use the same argument for proving [c] to be a surface realization of what we consider to be the underlying segment /č/.

3.5.4. But before considering Akhundov's view, let us consider three additional points which seem to confirm Hüseynov's view: First, Assaturian (1958) in his Azerbaijani phonemic inventory gives /č ǰ k� g̓/, not /c ʒ ǵ ǵ́/. He mentions, in footnotes, however, that these sounds, i.e., /č ǰ k̓ g̓/ are extremely fronted by some Azerbaijani speakers. With respect to /g̓ k̓/, i.e., the palatal stops, as we have already seen (2.1.4), Assaturian says: 'the two phonemes /g^y/ and /k^y/ are so strongly palatalized and fronted with some speakers, especially in Tabriz, Ardabil and other areas of Iranian Azerbaijan, that they sound almost like /dǰ/ and /tč/ respectively. The informant for this thesis was free of such an articulatory tendency' (p.36,fn.9). It seems that this quotation alone supports our point that we should not posit different underlying segments for each dialect of Azerbaijani. Assaturian aptly talks of /g^y/ and /k^y/ as Azerbaijani phonemes (in terms of generative phonology systematic phonemes), and distinguishes Tabriz, Ardabil, etc., versions of them with the 'articulatory tendency' of palatalizing and fronting. Furthermore, it is inferable from Assaturian's sentence that in the areas where palatalization and fronting form the dominant 'articulatory tendency' there are speakers 'free of such articulatory tendency.' Assaturian does not identify his Azerbaijani informant beyond 'Mr. Y.K. who generously gave his time and assistance for the analysis of the Azeri Turkish' (p.vii). There seems, however, to be considerable evidence for Mr. Y.K.'s being from Southern Azerbaijan. In this case, if his speech 'was free of such an articulatory tendency', and as it can be gathered from Assaturian's statement, there are others like Mr. Y.K., then we have both strongly palatalized and fronted [k^y g^y] (i.e., [ǵ́ ǵ́]) and palatal [k^y g^y] (i.e., [k̓ g̓]), in the speech of the speakers of the same dialect.

This shows that the [ǰ ǰ̂] vs. [ḱ ǵ] difference is not 'phonemic' in

Tabriz or the whole Azerbaijan for that matter. And we can generalize

the [ǰ ǰ̂] vs. [ḱ ǵ] difference to [c ʒ ǰ ǰ̂] vs. [č ǰ ḱ ǵ], among

other considerations, on the basis of the following observation by

Assaturian: 'Those Azeri speakers, who articulate the /k^y/ and /g^y/ pho-

nemes as (tč) and (dj), instead of (č^y) and (j^y) would use (c) and (dz)'

(p.40, fn.10).

3.5.5. Secondly, in Fraenkel's 1961, which treats 'chiefly the

Tabriz dialect which will be understood all over Persian Azerbaijan and

in most of Soviet Azerbaijan' (p.6), we find further support for positing

a unique set of underlying segments for Azerbaijani as a whole. The con-

sonant system Fraenkel finds in Azerbaijani includes /č ǰ c g/, which he

describes as follows (p.448):

> č voiceless blade-palatal [i.e., alveopalatal or [+hi, +cor,
> -vce, -cnt] H.S.] affricate, church, or like ts in hats.
> ǰ voiced blade-palatal affricate, judge or adze. c fortis
> dorso-palatal stop [i.e., palatal or [+hi, -cor, -bk, -vce,
> -cnt] H.S.], roughly as Southern cyards, affricated (some-
> times almost as in church); fricative when final or before
> consonant (German ich). In loan words in absolute final
> position a distinction between the stop and fricative allo-
> phone is frequently made. g lenis dorso-palatal stop [i.e.,
> palatal or [+hi, -cor, -bk, -vce, -cnt] H.S.], roughly gy-
> in Southern gyarden; voiceless etc., as for b [i.e., 'un-
> voiced initially and after consonants; partly or unvoiced
> and unexploded finally; voiced and often fricative between
> vowels,' from Fraenkel's description of /b/ p.447. H.S.];
> sometimes slightly affricated, (judge).

3.5.5.1. It is noteworthy that Fraenkel's informant comes from

Tabriz. And aware as he is of the existence of [c ʒ] in Tabriz speech,

Fraenkel does not posit /c ʒ /; rather, he posits /č ǰ/ which surface as

both [c ʒ] and [č ǰ]. Similarly, instead of positing alveopalatal retro-

flex affricates /ǰ̂ ǰ̂/ Fraenkel posits palatal stops /c g/ (i.e., /ḱ ǵ/

in our notation).

3.5.6. Thirdly, some Northern Azerbaijani linguists ascribe the
origin of [c ȝ] in Azerbaijani dialects to the influence of other lan-
guages; e.g., I.Hajiyev (Akhundov 1973:246) considers [ȝ] in the Basgal,
Müjü dialects as the result of Tat influence; T. Hämzäyev (Ibid.), fol-
lowing A. Šanidze (Ibid.), considers [ȝ] as the result of Albanian in-
fluence; and A. Hüseynov (Ibid.), and Akhundov (Ibid.), consider [ȝ]
traceable to other Turkic languages. Akhundov even seems to consider
[ȝ] as an earlier form of [ǰ], because, reportedly, in some old sources
the contemporary [ǰ] has been written as dz, e.g., the proper name
[gӕnǰӕ], [[ɟ̑ӕnȝӕ] in Tabriz pronunciation. H.S.] appears as Gandza.
Finally, Akhundov (1973:246) observes that the fact that the voiceless
counterpart of [ȝ], i.e., [c], also, parallels [č], suggests a regular
correspondence between [c ȝ] and [č ǰ]. In other words, just as [ȝ]
is an older form of [ǰ], [c], too, is an older form of [č].

3.5.6.1. What interests us most is that Akhundov speaks of a reg-
ular correspondence between [c ȝ] and [č ǰ] in Azerbaijani dialects,
which confirms our view that there should be a unique underlying set
with varying phonetic realizations in dialects. This is to be extended
to [β̑ ɟ̑] vs. [k̑ g̑] correspondence, as well, i.e., [β̑ ɟ̑] and [k̑ g̑] are
phonetic realizations of /k g/. It is with this view that we appreciate
Azӓr Hüseynov's observation to the effect that [c ȝ β̑ ɟ̑] are phonetic
variants of [č ǰ k̑ g̑] (Akhundov 1973:243).

3.5.6.2. Now let us turn to Aknundov's objection to Hüseynov's
considering [c] as a variant of /č/. We do not agree with Akhundov on
the phonemic status of [c], though we find his view of the nature of [c]
helpful to our argument. Akhundov considers [c] not only as an indepen-
dent 'phoneme' in the Ordubad dialect, but an older sound compared to

[č]. Akhundov (1973:244) bases this view on the observation that 'the [s] element which emerges like the ending phase of [ts] is easier for pronunciation, and historically, too, older than the [š] sound of the ending phase of [tš].'

3.5.6.3. Before learning Akhundov's view that [c] can be an older sound than [č], the present writer had employed a logic similar to Akhundov's. The present writer had noticed that [c] and [ʒ] word-finally and before consonants change to [š] and [ž], and he had been encouraged to consider [c ʒ] as the clusters [ts dz] at these points, remembering Bloch's (1941:281) observation about his English /č ǰ/ which are unit phonemes everywhere except that 'at the end of a stressed syllable after a nasal, they behave exactly like ordinary clusters of stop plus spirant.' On the basis of the consistency with which the present writer's [c ʒ] change to [š ž] word-finally and preconsonantally, after gathering from Akhundov's physiological-acoustic accounts that he considers [c ʒ] as [ts dz], and [č ǰ] as [tš dž], the wrtier would like to employ it as supporting evidence to the correctness of our view about the relationship between [c ʒ] in Tabriz speech and [č ǰ] in other Azerbaijani dialects.

3.5.7. Our view that regardless of predictable phonetic differences, one system of underlying segments should be posited for Azerbaijani as a whole is also supported by Trubetzkoy's view on the nature of dialectal differences. 'The phonetic realization of individual phonemes,' according to Trubetzkoy, is one of the 'three types of the phonetic differences between two dialects' (Trubetzkoy 1969:298).

3.5.7.1. Further, on the basis of the following explanation by Trubetzkoy, the [c ʒ ɓ ƙ] vs. [č ǰ ḱ ǵ] difference in Azerbaijani is of

the kind Trubetzkoy (1969:299) calls 'absolute' phonetic difference:

> The phonetic differences may be 'absolute' when they affect
> the realization of a phoneme in all positions,.... An ab-
> solute phonetic difference exists, for example, between the
> Polish dialects that realize the ʎ as l (a somewhat retracted
> l) and those that realize the ʎ as u̯. ·

3.5.7.2. The phonetic difference between [c ʒ ƚ́ ǥ́] and [č ǰ ḱ ǧ]
is absolute in the sense that they do not alternate in the speech of
individual speakers; either one or the other set is consistently employed
by an individual. Yet, the phonetic difference does not carry semantic
difference across dialects; regardless of whether [c ʒ ƚ́ ǥ́] or [č ǰ ḱ ǧ]
is used, the word has the same meaning. In other words, both [c ʒ ƚ́ ǥ́]
and [č ǰ ḱ ǧ] are phonetic realizations of the unique underlying set
/č ǰ k g/.

3.5.7.3. If it is asked why /č ǰ k g/ and not /c ʒ ƚ́ ǥ́/ are
posited as underlying segments, the reason is that whereas both /č ǰ k g/>
[č ǰ ḱ ǧ] and /c ʒ ƚ́ ǥ́/>[c ʒ ƚ́ ǥ́] are straight-forward, it is not so
with regard to the production of [š ž x̌ j]. Whereas /č ǰ k g/ to [š ž
x̌ j] is expected, /c ʒ ƚ́ ǥ́/ to[š ž x̌ j] is not normally expected unless
we posit /č ǰ k g/ as underlying segments which even though they surface
as [c ʒ ƚ́ ǥ́] in some dialects, they have one spirantized form (i.e.,
[š ž x̌ j]) in all dialects whether the underlying /č ǰ k g/ surfaces as
[č ǰ ḱ ǧ] or as [c ʒ ƚ́ ǥ́].

3.5.7.4. To see this point, consider the words for 'to fly',
'point', 'ash', 'flower' which are pronounced respectively [uc], [u ʒ],
[ƚ́ül], [ǥ́ül] in Tabriz, and [uč], [uǰ], [ḱül], [ǧül] in other Azerbai-
jani dialects, such as the Northern literary dialect. However, in both
groups of dialects the words for 'to fly' and 'point' are pronounced
[uš], [už] in normal speech. And in those dialects in which [ƚ́ ǥ́]/[ḱ ǧ]

spirantize, in predictable environments, we get [x́] for both [ḱ̂] and
[ḱ], and we get [j] for both [ĝ̂] and [ǵ]. E.g., 'is planting' and
'planted' are [æḱ̂ir] and [æx́di] in Tabriz, and [æḱir] and [æx́di]
in the Northern literary dialect. Similarly, the word for 'valiant' is
[iĝ̂id]~[ijit] in Tabriz, and [iǵid]~[ijit] in the Northern literary
dialect of Azerbaijani.

3.5.7.5. Therefore, we posit /č ǰ k g/ as Azerbaijani underlying
segments which are realized as [č ǰ ḱ ǵ] in some Azerbaijani dialects
including the Baku dialect, and as [c ɟ ḱ̂ ĝ̂] in some other dialects of
Azerbaijani including the Tabriz dialect. The phonetic difference be-
tween [č ǰ ḱ ǵ] and [c ɟ ḱ̂ ĝ̂] is accountable by the following dialect
specific Tabriz context free rules of (TCFR) which take /č ǰ/ [ḱ ǵ] («
/k g/) to [c ɟ ḱ̂ ĝ̂]:

$$/č\ ǰ/ \rightarrow [c\ ɟ\ ]$$

     i.e.

(TCFR) $\begin{bmatrix} -syl \\ +hi \\ -bk \\ +cor \end{bmatrix} \rightarrow \begin{bmatrix} -hi \\ +ant \end{bmatrix}$

           $$[ḱ\ ǵ] \rightarrow [ḱ̂\ ĝ̂]$$

     i.e.

(TCFR) $\begin{bmatrix} -syl \\ +hi \\ -bk \\ -cnt \end{bmatrix} \rightarrow \begin{bmatrix} -hi \\ +cor \\ +strid. \end{bmatrix}$

3.6. Another Azerbaijani segment in need of some discussion is
the voiced velar stop [g]. All the linguists mentioned, in one way or
another do include /g/ in their discussion of Azerbaijani phonemes. In
terms of generative phonology, Azerbaijani has an underlying voiced velar
stop which also surfaces as voiced, and voiceless velar fricatives [g]

and [x], as well as the voiceless velar stop [k].

    3.6.1. Except in affected literary style, we do not come across a word-final voiced stop in Tabriz speech, nor most probably in the majority of Azerbaijani dialects.[10] Although the word-final voiced velar stop appears frequently in orthography, I know of no instance of a native Azerbaijani word with word-final voiced velar stop in Tabriz speech. In this environment the voiced velar stop spirantizes, remaining, however, voiced before the vowel of a following word, e.g., _ušaġ_ [üšax] 'child', _ušaġ olma_ [üšaġolma] 'Don't be a child!'

    3.6.2. As just mentioned, in the majority of Azerbaijani dialects we do not find a final voiced velar stop. Word-finally, in monosyllabics the traditional orthographic _ġ_ (our underlying /ġ/ segment) is realized as [x] or [ġ]. Word-finally in polysyllabic words the voiced velar stop /ġ/ is realized as [x] in the Northern, Western and Southern Azerbaijani dialects including the Tabriz dialect, by the following rule:

$$(ġ \rightarrow x) \quad \begin{bmatrix} +cns \\ -syl \\ +hi \\ +bk \end{bmatrix} \rightarrow \begin{bmatrix} +cnt \\ -vce \end{bmatrix} / \: VC_1^2 V \text{ --- } \#$$

    This rule accounts for the Tabriz pronunciation of the /ġ/ in words like: _balïġ_ [balïx] 'fish', _bulaġ_ [bulax] 'fountain'.

    3.6.3. But since in the Eastern group of Azerbaijani dialects the /ġ/ is only spirantized to [ġ] without further devoicing to [x], by an alternate analysis, the just given rule of spirantization and devoicing (see 3.6.2) can be conceived as consisting of two steps: (1) the spirantization of the /ġ/ to [ġ], i.e., /ġ/$\rightarrow$[ġ]/V— which would account for the surface form of the /ġ/ in the Eastern dialects of Azerbaijani, as in _balïġ_ [balïġ] 'fish', _bulaġ_ [bulaġ] 'fountain', etc., (2) the subsequent devoicing of the [ġ] resulting from step (1), i.e., [ġ]$\rightarrow$[x]/VC_1^2V—#

which would give the forms in the Northern, Western and Southern Azer-
baijani dialects including the Tabriz dialect.

The advantage of this analysis is that it accounts for the dialect
differences in terms of the presence of an additional rule, i.e., the
devoicing of [ǧ] to [x], in one group of dialects, i.e., the Northern,
Western, Southern, and the absence of this rule in another group of
Azerbaijani dialects, i.e., the Eastern dialects. This two step deriva-
tion may thus be illustrated:

	'mountain' /dāg/	'right' /sāg/	'branch' /budag/	'room' /otag/	
/g/→[ǧ]/V—(see 3.6.4) (FVS) (see 3.11.3.4)	ǧ a	ǧ a	ǧ	ǧ	
	[daǧ]	[saǧ]	[budaǧ]	[otaǧ]	Eastern dialects
[ǧ]→[x]/VC$^2_1$V—# (see 3.8)			x	x	
	[daǧ]	[saǧ]	[budax]	[otax]	N.,W.,S. dialects

3.6.4. While the non-word-initial realization of the /g/ as [ǧ]
can be shown by the following rules of voiced velar stop spirantization
and velar fricative devoicing (VFO) it can also be deduced from rule
(V spir) that Azerbaijani can do without an underlying segment [ǧ], be-
cause the surface realization of this segment is always predictable.
In other words this is the only environment which [ǧ] occurs.

(V spir)   g → [ǧ] / V —

(V spir) $\begin{bmatrix} +cns \\ +hi \\ +bk \\ +vce \end{bmatrix}$ → [+cnt] / [+syl] —

3.6.4.1. Considering that the voiced palatal stop [ǵ] (</g/),
too, spirantizes after vowels, the rule of velar stop spirantization
(Vspir) (3.6.4) can be revised into the rule of high vioced stop
spirantization (HVSS):

$$(\text{HVSS}) \quad \begin{bmatrix} +\text{cns} \\ +\text{hi} \\ +\text{vce} \\ -\text{strid} \end{bmatrix} \rightarrow [+\text{cnt}] \ / \ [+\text{syl}] \ \underline{\hspace{1cm}}$$

In this rule the feature [+bk] of (Vspri) has been omitted so that it can account for the palatal [ǧ]→[j]/V—. And the feature [-strid] has been added to block the application of the rule to the high voiced affricate /ǰ/. The following derivations illustrate the operation of the (HVSS):

	'sir' /aɣa/	'valiant' /iɣid/	'high' /uǰa/
(RVS)	—	ǧ́	—
(HVSS)	ɣ	j	—
(Devoicing)	—	t	—
(TCFR)	—	—	ǰ
	[aɣa]	[ijit]	[uǰa]

Rule (Vspir) which can be illustrated in the following derivations is valid for all Azerbaijani dialects:

	'garden' /bāg/	'in the garden' /bāg + da/	'hawk' /guzgun/	'boy' /oglan/
(V spir) (see 3.6.4)	ǧ	ǧ	—	ǧ
(FVS)	a		—	
(NFVS)	—	a	—	—
	[baɣ]	[baɣda]	[guzgun][12]	[oglan]

3.6.4.2. And as for rule (VFD), it consists of two parts, part (a) applying to all Azerbaijani dialects whereas part (b) applies to all Azerbaijani dialects except the Eastern dialects:

$$(\text{VFD}) \quad [\text{ǧ}] \rightarrow [x] \ / \left\{ \begin{matrix} (\text{C}) \ [\overset{v}{-\text{lng}}] \\ \text{VCV} \end{matrix} \right\} \ \underline{\hspace{1cm}} \ \# \ \begin{matrix} (\text{a}) \\ (\text{b}) \end{matrix}$$

$$(\text{VFD}) \quad \begin{bmatrix} +\text{cns} \\ +\text{hi} \\ +\text{bk} \\ +\text{vce} \\ +\text{cnt} \end{bmatrix} \rightarrow [-\text{vce}] \ / \left\{ \begin{matrix} \left(\begin{bmatrix} -\text{syl} \\ +\text{cns} \end{bmatrix} \right) \begin{bmatrix} +\text{syl} \\ -\text{lng} \end{bmatrix} \\ [+\text{syl}] \begin{bmatrix} -\text{syl} \\ +\text{cns} \end{bmatrix} [+\text{syl}] \end{matrix} \right\} \ \underline{\hspace{1cm}} \ \#$$

(a) All Azerbaijani dialects
(b) All Azerbaijani dialects except the Eastern.

Rule (VFD) is reflected in the following derivations:

	'oil' /jāg/	'spread,burn' /jāg/	'white' /āg/	'arrow' /og/	N,W,S 'fish' /balïg/	Eastern /balïg/
(V spir)	g	g	g	g	g	g
(Devoicing)	—	x	—	x	x	
(FVS)	a	—	a	—	—	
	[jag]	[jax]	[ag]	[ox]	[balïx]	[balïg]

3.6.5. As for the realization of the final /g/ in monosyllabics,
it surfaces as [x] or [g], probably depending on the length of the pre-
ceding vowel.

We have not come across any explanation concerning how to account
for the final [x] and [g] in monosyllabics. After learning from Emre
(1949) that once there did exist long vowels in Turkic languages (traces
of which can still be found, e.g., in Uzbek and Yakut), and that these
long vowels have been responsible for the existence of the word-final
voiced segments in monosyllabics, now we think we may conceive of [jïx]
'demolish' vs. [jïg] 'gather' problem as [jïx] </jïg/ vs. [jïg] </jïg/.
I.e., the vowel length has influenced the voiced or voicelessness of the
final consonant. (See also the derivations in 3.6.3 - 4.)

3.7. It may be objected that except in the initial syllable of a
few words like [jāšil] 'green', [gālin] 'think', [nārin] 'fine (size)',
etc., there are no long vowels in native words, hence we should not posit
long underlying vowels. An answer is that even if there are (almost) no
long vowels in contemporary Azerbaijani, if positing them helps bring
out regularities otherwise unaccountable, we should not hesitate to posit
them. After all we do have long underlying vowels in many loanwords
which are nativized into ordinary vowels. Why not also posit native
long vowels where necessary? The rule that shortens the long loan vowels
can also take care of the long Old Turkic vowels. In fact, the accep-

tance of Emre's hypothesis presupposes the synchronic existence of a rule
that has shortened the Old Turkic long vowels.

3.8. Unlike the process which causes the underlying word-final
voiced velar stop in polysyllabics to surface as [ǧ] in Eastern Azerbai-
jani dialects and as [x] in Northern, Western and Southern dialects, in
'literary pronunciation' spirantization does not take place; instead,
the segment is subject to another native rule, i.e., devoicing, which
also causes b,d → p,t/VCV — #. Thus, e.g., /alaǰag/ 'will obtain',
which is [alaǰaǧ] in Eastern, and [alaǰax] / [alaɣax] in Northern, Western
and Southern Azerbaijani dialects, becomes [alaǰak] in the literary pro-
nunciation (of Northern Azerbaijan), and balïgsïz 'fishless', which is
[balïgsïz] in Eastern Azerbaijani dialects and [balïxsïz] in Northern,
Western and Southern dialects, becomes [balïksïz] in the literary pronun-
ciation. But, reportedly, this stylistically produced voiceless velar
stop is not yet widespread. In Akhundov's words, 'this change is still
not the popular and popular literary norm in pronunciation' (Akhundov
1973:300).[13] In fact in popular literary pronunciation, the final voiced
velar stop is spirantized and devoiced, as it is in Northern, Western
and Southern Azerbaijani dialects. Concerning this, Dämirchizadä (1972:
94) says: 'the word-final voiced velar stop of polysyllabics is pronounced
[x] in accordance with the norm of the literary pronunciation, except
when it is followed by a vowel-initial word or suffix, in which case it
is pronounced [ǧ].'

3.9. Finally, in the area of consonants, the last question to be
treated in this chapter is the question of the segment underlying the
voiceless palatal fricative [x́]. We are aware of three hypotheses as to
the segment underlying the [x́]:

3.9.1. According to one phonemic view, [x́] is the voiceless counterpart of /j/. We have already dealt with this (see 2.4.7.3 - 9).

3.9.2. Another phonemic view is that [x́] is a variant of the voiceless velar fricative /x/ (Hoequist 1975:8). Plausible as it is from the synharmonic viewpoint (i.e., the fact that in Turkic languages vowels and consonants within a word agree with regard to backness/frontness feature), this solution seems to fail to account for the facts reflected in Azerbaijani dialects concerning [x́]. This should become clear in the light of the following discussion presenting a third view.

3.9.3. According to the third view (see 2.4.6 - 6) [x́] is a variant of the palatal stop /ḱ/. This seems to be the traditional assumption tacitly held by literate Azerbaijani speakers of the dialects concerned, as well as the majority of the grammarians describing Azerbaijani.

E.g., from what may be inferred from Akhundov's discussion (1973: 248), this view is held by some Northern Azerbaijani linguists like M. Hüseynzadä and Ä. Äfändizadä.

Similarly, Assaturian, Fraenkel, and Färzanä, obviously adhere to this traditional view. Assaturian (1958:36) speaks of final /ḱ/ thus: '(k^y) occurs initially, medially, and finally'; Fraendel (1961:448) clearly refers to the relationship between the palatal stop /ḱ/ and its preconsonantal and fricative variant [x́]: '/c/ fortis dorso-palatal stop, roughly in Southern Cyard, affricated (sometimes almost as in church); fricative when final or before consonant (German ich)'; and according to Färzana (1965:33) 'before a vowel [initial suffix or word. H.S.] the sound [ḱ] at the end of polysyllabic morphemes becomes [j], e.g., [sümüḱ] 'bone' [sümüjæ] 'bone' (objective), [inæḱ] 'cow' [inæji] 'the cow' (accusative).' Note that Färzanä, too, speaks of a word-final [ḱ] 'sound';

he uses the symbol k̲ (=[k̓]) for the sound [k̓], not for [x̓].

   It is to be noted that there is not contradiction between the view
(inferable from Assaturian's and Färzänä's work) that there is a final
[x̓] rather than [k̓], because whereas in many Azerbaijani dialects, pre-
consonantally and finally, [k̓] becomes [x̓], in many others it remains as
[k̓]. The basic assumption in both views is that the segment underlying
the palatal fricative [x̓] is the palatal stop /k̓/. (Concerning /k̓/, as
already discussed (3.2.11), we regard the palatal stops as the phonetic
realization of the underlying velar stops /k g/ according to the rule of
the realization of the velar stops (RVS) (3.2.11).)

   3.9.4. This assumption, also held by us, finds further support in
the following discussion raised by an argument to the contrary by Dämir-
chizadä, who considers the final k̲ as a mere symbol for [x̓]. Dämirchi-
zadä (1972:95-6, 136-7) observes that since the contemporary Azerbaijani
alphabet has no specific symbol for the voiceless counterpart of [j],
this sound, i.e., [x̓], is represented with the grapheme k̲. E.g., the
medial and final k̲ in the words čičäki 'the flower' (accusative), and
čičäk al 'Buy flowers!' is not really [k̓], but [x̓] which is voiced to
[j] in the environment of the following vowel-initial suffix or word.
Thus, čičäki and čičäk al are not [čičæki̓] and [čičæ kal], but [čičæ ji]
<*/cicæx̓+i/ and [čičæ jal] <*/čičæx̓#al/.

   3.9.4.1. Although this view is not wholly accurate, as it will be-
come clear in the succeeding paragraphs, it is considerably accurate;in
the literary dialect of Northern Azerbaijan, as well as in the speech of
Tabriz, the orthographic k̲ preconsonantally and finally is pronounced
[x̓], e.g., tük [tüx̓] 'hair', tüklär [tüx̓læ r] 'hairs', inäk [inæx̓] 'cow',
inaklar [inæx̓læ r] 'cows', inäkči [inæx̓či]/[inæx̓ci] 'cow keeper',
käpänäk [k̓æ pæ næ x̓]/[ℏæ̃ æ pæ næ x̓] 'butterfly', kapänäklär [k̓æ pæ næ x̓læ r]/

[p̌æ pæ næ x́læ r] 'butterflies'.

In these dialects the morpheme-final k of the monosyllabic morphemes before a vowel-initial suffix or word, is pronounced [j], e.g., 'to the cow' [inæ jæ]</inæ k+a /, 'the butterfly' [kae pæ næ ji]/[p̌æ pæ næ ji] </kæ pæ næ k+i/, cf. the monosyllabic [æ kæ]/[æ p̌æ]</æ k+a / 'so that he plants.'

3.9.4.2. As far as phonetic facts are concerned Dämirchizadä is right in considering the orthographic k, finally in polysyllabic words as a mere orthographic symbol which is pronounced as the voiceless palatal fricative [x́] which becomes a voiced palatal semivowel [j] before vowels.

3.9.4.3. But, as already mentioned (see 2.4.7.3 - 5), the k of the monosyllabic words which preconsonantally and finally is pronounced [x́], does have the phonetic value of the palatal stop (in the case of Tabriz speech, it is an alveopalatal retroflex affricate) before a suffix or word beginning with a vowel, e.g., [æ kíndi]/[æ p̌́indi] < /æ k+in+di/ äkindi 'it is an area under grain crops', [ǽ kíndi]/[ǽ p̌́indi] </æ k#indi/ äk indi 'Plant/sow now!', [tæ kí]/[tæ p̌́i] </tæ k+i/ täki 'the odd numbered one', [tǽ kúlduz]/[tǽ p̌́ulduz] </tæk # ulduz/ täk ulduz 'single star.' In other words, the voiceless palatal stop that surfaces as the palatal fricative, in monosyllabics does surface before a vowel. This surfacing of the palatal segment in the dialect Dämirchizadä describes, as well as in Tabriz speech, is more clearly observable in some other dialects of Azerbaijani where the palatal stop surfaces unchanged (in the case of Tabriz speech, it is changed to the voiceless alveopalatal retroflex affricate). E.g., among the Eastern dialects, there are at least four (i.e., the dialects of the Märzä region, the Mughan region,

the Göyčay region and the Aghdash region) which have unchanged final [k']. In the texts from these regions in Shiräliyev's book (1967:370, 374) we find [gedæk'] 'Let's go!' in Märzä and Mughan regions, and [göræk'] 'Let's see!' in Göyčay and Aghdash regions (Ibid.,377, 378).

3.9.4.4. In some other dialects of Azerbaijani, e.g., the Baku dialect, apparently the [k'] preconsonantally surfaces unchanged, and before vowels and finally as the voiced palatal stop [g], e.g., [kǽkliklæ r] kȃkliklär 'quails' (Shiräliyev 1967:362), [bæslæmæ gæ] (Ibid., 357) </bæslæmæk+a / 'for fostering', [čoræg'] (Ibid.,358, 360) čöräk 'bread.'

3.9.4.5. These examples suffice to show that the orthographic final k in Azerbaijani words is not an arbitrary symbol for the sound [x], (as Dämirchizadä claims), merely because the Azerbaijani alphabet has no other symbol for it. On the contrary, study of the dialectal pronunciations of Azerbaijani words suggests that the [k'] is realized unchanged as [k'], spirantized as [x'], voiced as [g], voiced and spirantized as [j], and even realized as [h] in Azerbaijani dialects. E.g., the word for 'bread' appears as [čoræx'] ([coræx'] in Tabriz) in Shahbuz (404),[14] Ordubad (406), Nukha (412), Tabriz and other dialects; as [čöræg'] in the Baku dialect (358, 360), Ismayɨllɨ region and other places within Eastern Azerbaijani dialects; as [čoræj] in Ordubad (406); as [čoræh] in the Ordubad dialect (406); and we find final [k'] in [gǽræk'] 'must', [gedæk'] 'Let's go!', [görjæk'] 'upon seeing' along with [čöræj] 'bread', [göræj] 'Let's see!' (370) in the Märzä region, [bilmæk'] 'to know' (371), [gedæk'] 'Let's go!' (374), along with [kǽsæg] 'let's cut' (373), [jijæg] (372) yiyäk 'Let's eat!', [dijærüg] (374) diyärik 'we shall say' in the Mughan group of dialects; [gæšæk'] (377) gašæng 'pretty', [böjük'] (377) böyük 'great', [üstæ lik'] (377) üstälik 'additional',

[elæmæ rík] 'we shall/do not do (that)', [ǵedæjæ k] 'will go' in the Göyčay region. In some dialects more than one phonetic form of [k̓] in a given position is realized, e.g., in Aghdam: [inæ k̓]~[inæ j] (397) iná*k* 'cow' vs. [jejæ x̌] 'let's eat' yeyák, vs. [čæ hdi] (396) čákdi 'drew'; in Ordubad: [æ pbæ x̌] (406) vs. [æ pbæ j] (406) áppäk 'bread' vs. [čóræ h] (406) cöräk 'bread' and [ǵedæ h] gedäk 'Let's go!' (406).

3.9.4.6. Considering the fact that words are not semantically differentiated for the difference of the preconsonantal or final [k̓], [x̌], [ǵ], [j], or [h], as we just saw, these forms must be members or manifestations of only one basic form. This basic form, traditionally called the 'letter' *k* or 'phoneme' /k/, is in generative terms the underlying velar segment /k/ which by the rule of the realization of the velar stops (RVS) (3.2.11) surfaces palatal stop [k̓], which in some dialects of Azerbaijani including the Tabriz dialect becomes [ǰ̓] as a result of the application of the Tabriz context free rule (TCFR).

3.9.4.7. The advantage of the traditional and generative interpretations (over interpretations like Dämirchizadä's) is that the phonetic forms of the *k* in perhaps all Azerbaijani dialects are accounted for by showing that the phonetic forms are members of /k/, or are derived from /k/ by (3.2.11) and (3.2.12), whereas if this basic common ground (i.e., the fact that in predictable positions, [k̓], [x̌], [ǵ], [j], [h] are phonetic forms of /k/) is ignored, each dialect would perhaps need to be assigned the phonetic form of /k/ occurring in it as its 'phoneme.' This would mean ignoring the fact that plurality in phonetic form does not impair the unity of meaning across Azerbaijani dialects and speeches.

3.9.4.8. The relationship between the orthographic forms like inák 'cow' (which we take as the underlying form) and the phonetic forms [inæ k̓],

[inaǽx], [inaǽǵ], [inaǽj], [inaǽh] can be understood as phonological pro-
cesses explainable by rules pertaining to each dialect. Thus, in the
Tabriz dialect (as well as the Northern literary dialect) [+hi, -cnt,
-bk] and [+hi, -cnt, +bk]   segments (i.e., /č ǰ k g/) are spirantized
finally and preconsonantally (e.g., [uš] uč 'Fly!', [už] uǰ 'point', [aǽx]
äk 'Plant/Sow!', [ǵöj]/[ǵ̵öj] gög 'sky', [otax] otag 'room'; [ušdi] učdɨ
'flew', [užli] uǰlɨ 'pointed' (noun), [ǽxsæm] ǽksæm 'If I plant/sow',
[otaxda] otagda 'in the room'). Hence, the traditional and generative
interpretation of [x́] can be seen as an instance of the application of
the rule of spirantization to any strident, noncontinuant segment (i.e.,
/č ǰ/) as well as the high nonstrident noncontinuant segments (i.e.,
[ḱ ǵ], /g/) of the Azerbaijani consonant system.

3.10. Linguists who have examined Azerbaijani vowel system almost
unanimously hold that Azerbaijani has nine nonlong vowels. The fact
that, in speech diphthongs, long and short and nasal vowels, are phonet-
ically produced has also been recognized.

3.10.1. From among the linguists whose work we have examined, only
one (i.e., Akhundov 1973) posits more than nine vowel phonemes for Azer-
baijani. As we have already seen, in addition to the nine ordinary
vowels recognized by all (i.e., /i ü e ö æ a o u ɨ/) Akhundov also
posits five long vowels (i.e., /ī ē ō ǣ ā/, and two diphthongs (i.e.,
/öü ou/).

3.10.2. The existence of long vowels in Azerbaijani is confirmed
by Shiräliyev's work (1967:23) on Azerbaijani dialects, according to
which Azerbaijani dialects present a system of long vowels in addition
to the normal vowels. As we saw (2.6.2 - 3), Shiräliyev classifies the
long vowels into two groups: (a) those found in a very limited number of

native Azerbaijani words, (b) those phonetically formed as well as those found in some loanwords.

3.10.2.1. Despite Akhundov's view, however, these long vowels may not be considered 'phonemes' because even if we manage to discover minimal pairs like [doga] 'that she gives birth': [dōga] dovga 'rice and vegetable soup with yogurt', we know how the predictable long [ō] in [dōga] has been formed.

3.10.2.2. Yet, even if nonphonemic, the difference between long and normal vowels is perceptible. And this seems to be sufficient reason for rendering long vowels noteworthy from the viewpoint of generative phonology which is concerned with the interpretation of the phonetic representations and how they are generated.

3.10.2.3. What makes some long vowels noteworthy from the generative viewpoint is that unlike the phonetically formed long vowels (see 2.6.5.1), the native long vowels (few and infrequent as they are) and long vowels in some loanwords cannot be accounted for except by deriving them from underlying long vowels (e.g., [jāšil]</jāšil/ 'green', [hāzir]< Arabic hāḍir 'ready').

3.10.2.4. In terms of generative phonology this means positing long underlying vowels in Azerbaijani. This seems plausible because it is in this way that the originally long vowels of the native words and loanwords can be accounted for. Positing underlying long vowels can also make it possible to predict the voice of the final consonant in monosyllabics as discussed above (see 3.6.5). According to Emre (1949: 60-7, 91), as late as the eleventh century there existed in Turkic languages long vowels which still persist in Yakut Turkic, and traces of which can be encountered in other Turkic languages.[15] (Are the long

vowels in the words [jāšil] 'green', [gālin] 'thick', [nārin] 'fine(size),
in Tabriz speech in this category as well?). The adoption of long under-
lying vowels has helped us do without an underlying /g/ (See 3.6.4).

3.10.2.5. Thus, we suggest the following underlying vowel system
for Azerbaijani:

i	ü	ɨ	u		ī	ū	ɨ̄	ū
e	ö		o		ē	ō		ō
æ		a			ǣ		ā	

3.10.2.6. Long vowels in native words, apparently except for a few
instances (See 2.6.2.4), do not surface in the majority of the modern
Turkic languages.[16] Yet we need the underlying long vowels for the rea-
sons already discussed (See 3.10.2.3 - 4).

3.11. Concerning the phonetic realization of Azerbaijani underlying
vowels a concise yet comprehensive generalization seems to be that 'in...
Turkic languages...the vocalism of the first syllable is richer than the
vocalism of all other syllables' (Trubetzkoy 1969:98).

3.11.1. In fact, except for /ɨ/ which occurs initially less fre-
quently all the normal vowels /i ü ɨ u, e o o, æ a/ occur initially,
where, unaccented, they are in their tense and shorter variants, whereas
in noninitial syllables they are lax and longer variants (See Assaturian
1958:16 - 20). It should be pointed out that the tenseness, shortness,
laxness, and length, in normal vowels, are hardly perceptible and not
phonologically significant.[17] In native words mid vowels do not occur
in noninitial syllables of a morpheme.

3.11.2. Phonologically significant phonetic realizations of Azer-
baijani vowels may be viewed in terms of the rule-governed change of
one vowel segment to another. These changes in the Tabriz dialect are
the following:

3.11.2.1. The change of word-initial and word-final /ɨ/ to [i].
Except in a few words like [ɨlxɨ] <u>ilxɨ</u> 'herd', [ɨšgɨrmax] <u>hɨcgɨrmag</u> 'to
hiccup', in the writer's pronunciation, and [ɨldɨrɨm] <u>ildɨrɨm</u> 'thunder-
bolt' [ɨlɨx] <u>ilɨg</u> 'lukewarm', [ɨlan] <u>ilan</u> 'snake', [ɨšɨx] <u>išɨg</u> 'light'
also in Tabriz pronunciation according to Färzanä (1965:30), underlying
word-initial /ɨ/ changes to [i] in both Tabriz speech and the literary
pronunciation.[18] This change may be formulated as the rule of high back
vowel fronting (HFa):

$$(\text{HFa}) \quad \begin{bmatrix} +\text{syl} \\ +\text{hi} \\ -\text{rnd} \end{bmatrix} \rightarrow [-\text{bk}] \ / \ \# \ \underline{\qquad}$$

3.11.2.1.1. Rule (HFa) is responsible for the change of the under-
lying /ɨ/ to [i] in many words including the following in the writer's
pronunciation: [ildɨrɨm]</ɨldɨrɨm/<u>ildɨrɨm</u> 'thunderbolt', [ilɨx]</ɨlɨg/
<u>ilɨg</u> 'lukewarm', [ilan]</ɨlan/ <u>ilan</u> 'snake', [išɨx]</ɨšɨg/ <u>išɨg</u> 'light.'
As a further point for the motivation of rule (HFa) we may consider the
Azerbaijani word for 'the day before yesterday', which is [isragağ̌ün]
in urban Tabriz pronunciation and [sɨragağ̌ün] in the literary pronun-
ciation. The difference between the two pronunciations is that in the
former, the word-initial underlying /ɨ/ has undergone rule (HFa) whereas
in the latter the non-word-initial /ɨ/ has not undergone this rule.

3.11.2.1.2. Unlike the case in literary pronunciation, in Tabriz
pronunciation the word-final /ɨ/, too, is fronted to [i], e.g., [gari]
<u>garɨ</u> 'old woman', [dari] <u>darɨ</u> 'millet', etc. And this change in Tabriz
pronunciation may be formulated as the rule of high back vowel fronting
(HFb):

$$(\text{HFb}) \quad \begin{bmatrix} +\text{syl} \\ +\text{hi} \\ -\text{rnd} \end{bmatrix} \rightarrow [-\text{bk}] \ / \ \underline{\qquad} \ \#$$

3.11.2.1.3. Since both are active in Tabriz speech, rules (HFa) and (HFb), by the neighborhood convention proposed by Bach (1968), can be collapsed into a more general high-unrounded-vowel fronting rule (HUF):

$$(\text{HUF}) \quad \begin{bmatrix} +\text{syl} \\ +\text{hi} \\ -\text{rnd} \end{bmatrix} \rightarrow [-\text{bk}] \ / \ \#$$

3.11.2.1.4. Besides applying to the examples cited for the rules (HFa) and (HFb), this rule also applies to words like [ildɨrɨmi] < /ɨldɨrɨm+ɨ/ ildɨrɨmɨ 'the thunderbolt' (accusative). [ilani] < /ɨlan+ɨ/ ilanɨ 'the snake' (accusative), etc.

3.11.2.2. In addition to the ɨ → i / #, in Tabriz speech we also have $\begin{Bmatrix} ü \\ u \end{Bmatrix}$ → i/CVC — #.[19] The latter rule which accounts for [süri] < /sürü/ sürü 'flock', [guzi] < /guzu/ guzu 'lamb', etc., consists of a rule of un-rounding for ü → i/CVC — #, as in [süri] etc., and a rule of both fronting and unrounding for u → i/CVC — # as in [guzi]. In other words, Tabriz speech seems to have a rule of word-final high vowel unrounding (HU):

$$(\text{HU}) \quad \begin{bmatrix} +\text{syl} \\ +\text{hi} \end{bmatrix} \rightarrow [-\text{rnd}] \ / \ \text{CVC} — \#$$

which is responsible for the derivation of [süri] < /sürü/ sürü 'flock', etc. and a rule of word-final high back vowel unrounding (HBU):

$$(\text{HBU}) \quad \begin{bmatrix} +\text{syl} \\ +\text{hi} \end{bmatrix} \rightarrow \begin{bmatrix} -\text{bk} \\ -\text{rnd} \end{bmatrix} \ / \ \text{CVC} — \#$$

which accounts for the derivations like [guzi] < /guzu/ guzu 'lamb', etc.

3.11.2.2.1. A closer examination, however, suggests that /u/ → [i]/ — # is actually produced by the rules (HUF) and (HU). This means that the application of (HU) and (HUF) in this order can make Azerbaijani phonology independent of the rule (HBU), as the following derivations show:

	'lamb'	'dry'	'pipe'	'clear'
	/guzu/	/guru/	/boru/	/duru/

(HU) $\begin{bmatrix} +syl \\ +hi \end{bmatrix} \rightarrow$ [-rnd]/CVC — #   ɨ   ɨ   ɨ   ɨ

(HUF) $\begin{bmatrix} +syl \\ +hi \\ -rnd \end{bmatrix} \rightarrow$ [-bk] / #   i   i   i   i

[guzi] [guri] [bori] [duri]

However, when because of suffixation there is no word boundary in the underlying representations after the root, the rules (HU) and (HUF) fail to apply consistently. E.g., in the following derivations, although no word boundary exists in the underlying representations, the rules apply:

	'to the lamb'	'to the flock'	'to the living'
	/guzu+a/	/sürü+a/	/diri+a/
(HU) (3.11.2.2)	ɨ	i	—
(HUF) (3.11.2.1.3)	i	—	—
(Glide-ins)	y	y	y
(VH)	æ	æ	æ
	[guziyæ]	[süriyæ]	[diriyæ]

This application of the rules across morpheme boundary rather than word boundary demands a revision of the rules into:

(HU) $\begin{bmatrix} +syl \\ +hi \end{bmatrix} \rightarrow$ [-rnd] / CVC — $\left\{ \begin{matrix} \# \\ + \end{matrix} \right\}$

(HUF) $\begin{bmatrix} +syl \\ +hi \\ -rnd \end{bmatrix} \rightarrow$ [-bk] / CVC — $\left\{ \begin{matrix} \# \\ + \end{matrix} \right\}$

These rules are valid for the neutralization of the high vowels both word-finally (e.g., [guzi]</guzu/ 'lamb') and morpheme-finally (e.g., [guziyæ]</guzu+a/ 'to the lamb'). Nevertheless, in some similar words as in the following derivations these rules do not apply:

	'my lamb' (accus.)	'lambs'	'in the flock'	'His flock, too'
	/guzu+m+i/	/guzu+lar/	/sürü+da/	/sürü+s+i+da/
(HU)	—	—	—	—
(HUF)	—	—	—	—
(VH)	u	—	æ	ü æ
(HU)	ɨ	—	—	—
(HUF)	i	—	—	—
	[guzumi]	[guzular]	[sürüdæ]	[sürüsüdæ]

The puzzle is that in the case of the former derivations the rules apply across morpheme boundary, whereas under identical circumstances, in the latter derivations, the rules fail to apply.

3.11.2.2.2. The issue, however, ceases to be a problem once one notices the relation between the operation of the rules (HU) and (HUF) and the class of the following suffix segment. In suffixation, the applicability of the rules (HU) and (HUF) depends on this following suffix segment. The rules apply only when the initial suffix segment is a vowel. These points can be accounted for by a further revision of the rules (HU) and (HUF) in the form of adding the feature [+syl] after the morpheme boundary:

$$\begin{bmatrix} +syl \\ +hi \end{bmatrix} \rightarrow [-rnd] \ / \ CVC - \begin{Bmatrix} \# \\ +[+syl] \end{Bmatrix}$$

$$\begin{bmatrix} +syl \\ +hi \\ -rnd \end{bmatrix} \rightarrow [-bk] \ / \ CVC - \begin{Bmatrix} \# \\ +[+syl] \end{Bmatrix}$$

3.11.2.2.3. Phonetic realizations of Azerbaijani vowels are also conditioned by the presence of the glide [y],[20] which raises and fronts the low vowel of the root, as can be seen in the pronunciation of the words [aniyæ] < anaya < /ana+a/ anaya 'to the mother', [næniyæ] < nænæyæ < /næ næ +a / nänäyä 'to the mother', [aneymiš] < anaymiš < /ana+imiš/ anaymiš 'it has been mother' [næneymiš] < næ næ ymiš < /næ næ + imiš/ 'it has been mother.'

3.11.2.2.4. As these examples show, the stem vowels preceding the glide change to [e] or [i]. These changes are effected by the following two rules:

(a) The stem vowels /a æ/ change to [e] before the front unround glide and voiced palatal fricative /j/ when it is followed by a consonant. This change can be formulated as the rule of low to mid vowel raising (/a æ/ to [e]):

$$(\text{/a æ/ to [e]}) \quad \begin{bmatrix} +syl \\ -hi \\ -rnd \end{bmatrix} \rightarrow \begin{bmatrix} -bk \\ -lo \end{bmatrix} \Big/ \quad - \begin{bmatrix} -syl \\ +hi \\ +cnt \\ -strid \\ -bk \end{bmatrix} [-syl]$$

(b) The stem vowels /a æ e/ change to [i] before the front unround glide and voiced palatal fricative when it is followed by a vowel. And this change can be formulated as the rule of low and mid to high vowel raising (/a æ e/ to [i]):

$$(\text{/a æ e/ to [i]}) \quad \begin{bmatrix} +syl \\ -hi \\ -rnd \end{bmatrix} \rightarrow \begin{bmatrix} +hi \\ -lo \\ -bk \end{bmatrix} \Big/ \quad - \begin{bmatrix} -syl \\ +hi \\ +cnt \\ -strid \\ -bk \end{bmatrix} [+syl]$$

Note that when the vowel following the [y] / /j/ is /i/, the raising can only be one degree, i.e., the mid vowel /e/, by one degree raises to [i], and the low vowels /a æ/, by one degree, raise to [e]. Although this is intuitively quite clear, it is not expressible by the SPE framework.

Before citing additional examples illustrating vowel raise in Tabriz speech, we need first to collapse the rules of (/a æ/ to [e]) and (/a æ e/ to [i]) into the more general rule of vowel raise (V-raise):

$$(\text{V-raise}) \quad \begin{bmatrix} +syl \\ -hi \\ -rnd \end{bmatrix} \rightarrow \begin{bmatrix} \propto hi \\ -lo \\ -bk \end{bmatrix} \Big/ - \begin{bmatrix} -syl \\ +hi \\ +cnt \\ -strid \\ -bk \end{bmatrix} [\propto syl]$$

The rule of (V-raise) states that the value for the feature [high] in the vowel preceding the [y] / /j/ is in a direct relationship with the value for the feature [syllabic] in the segment following the glide. If the value for the feature [syllabic] in the latter is plus, the value for the feature [high] in the former, too, is plus. Similarly, if the value for the feature [syllabic] in the latter is minus, the value for the feature [high] in the former is minus. In other words, if the segment following the glide is [+syllabic], the vowel preceding the [y]/ /j/ is [+high], and if the segment is [-syllabic] the vowel is [-high].

3.11.2.2.5. Secondly, since the rule of vowel raising, as we just saw, is motivated by the presence of a [y] / /j/, we need to account for the presence of the [y] / /j/ before citing examples for the rule of vowel raising. In native words, there seem to be two sources for [y]. It is inserted between a stem-final vowel and the initial vowel of a monosyllabic suffix, by the following rule of glide insertion (Glide-ins):

$$\text{(Glide-ins)} \quad \emptyset \longrightarrow \begin{bmatrix} -syl \\ -cns \\ +hi \\ \propto rnd \\ \propto bk \end{bmatrix} \Bigg/ \begin{bmatrix} +syl \\ \propto rnd \end{bmatrix} \quad \underline{\quad} \quad [+syl]$$

3.11.2.2.6. The application of this rule will be exemplified after the other rule responsible for the appearance of [y] is presented. This rule which changes the unstressed high front vowel to the front glide is the rule of glide formation (Glide-form):

$$\text{(Glide-form)} \quad \begin{bmatrix} -cns \\ +hi \\ -bk \\ -stress \end{bmatrix} \rightarrow [-syl] \Bigg/ [+syl] \quad \underline{\quad}$$

3.11.2.2.7. The application of the above three rules can be seen in the following derivations (The suffix /an/ is the agent marker; the vowel /a/ after a noun is the dative case suffix, after a verb the sub-

junctive or optative mood suffix; the vowel /i/ is the copula suffix;/di/
the third person singular subject suffix; /i+miš/ is the suffix combina-
tion of the copula /i/ and presumptive past suffix):

	'Return!'	'to the sayer'	'to the mother'	'(that) he say'
	/gajɨt/	/de+an+a/	/ana+a/	/de+a/
(Glide-ins)	—	y	y	y
(Glide-form)	—	—	—	—
(V-raise)	e	i	i	i
(VH)	i	æ æ	æ	æ
	[gejit]	[diyænæ]	[aniyæ]	[diyæ]

	'it was the mother'	'is saying'	'with the child'	'he must have been at home'
	/næ næ+i+d+i/	/de+ir/	/bala+ila/	/ev+da+i+mis/
(Glide-ins)	—	y	—	y
(Glide-form)	y	—	y	y
(V-raise)	e	i	e	e
(VH)	—	—	a	—
	[næneydi]	[diyir]	[baleylæ]	[evdeymiš]

The form [baleylæ] 'with the child' is the formal Tabriz pronun-
ciation. Its normal and informal pronunciation is [baleynæn] in which
through suppletion /inan/ rather than /ila/ is the concomitative suffix.

3.11.2.2.8. The words [næyi] 'what?' (accusative) and [næyæ]
'to what?' (dative) contradict the rule of vowel raising (V-raise). We
seem to be compelled to explain this contradiction by suggesting that
perhaps the final vowel of the monosyllabic <u>nouns</u> (not verbs) are not
ordinarily affected by the transition [y]. Hence, [næyi] < /næ+i/
(accusative) 'what?' and [næyæ] < /næ+a/ 'to what?' (dative), [næyin]
< /næ+in/ 'belonging to what?' (genitive) are the expected forms.

As for [niyæ] < /næ+a/ 'why?', the change of [æ] to [i] may have
been because of its association with verbs.

3.11.3. Finally, as already mentioned (3.10.2.4), long underlying vowels are necessary to account for the unpredictable long vowels in a few native words and the considerable number of the Arabic and Persian loans with long vowels in Azerbaijani.

3.11.3.1. A largely valid generalization about the distribution of the long vowels in loans, in formal and, to a lesser extent, in normal style of Azerbaijani speech seems to be Akhundov's (1973:129) observation to the effect that in Arabic loans in Azerbaijani the long vowels precede syllables with a front vowel. This generalization contributes to the specification of the distribution of the long vowels in loans like [ālim]< Arabic ʕālim 'learned', [rūhi]< Arabic rūḥī 'psychological', etc., but it cannot account for the long vowels in [tāvus] /tāvūs/< Arabic tāwūs 'peacock', [sīna]</sīnā/ sīnā 'Sinai', etc. where the long vowel is not followed by a syllable with front vowel.

3.11.3.2. Nevertheless, when we examine the more important question of the rule(s) responsible for shortening the long vowels in loans, Akhundov's observation, by specifying where long vowels can be expected, helps us see where they are not expected, i.e., where they are shortened. Akhundov's observation rightly relates the question of the shortening of the long vowels of the loans to the question of the backness/frontness harmony. If the vowels of a word do not agree in backness, one of them, i.e., the first, may remain long (e.g., [sīna], [rūhi], etc.), the long vowel in the final syllable is always shortened by the rule to be given. It can be inferred from this observation that when the vowels of a loan-word agree in backness shortening of the long vowel is not blocked. And this seems to be almost exceptionless.

3.11.3.3. In other words, there can be a rule like nonfinal vowel

shortening (NFVS):

$$(\text{NFVS}) \quad \begin{bmatrix} +\text{syl} \\ \propto\text{bk} \end{bmatrix} \rightarrow [-\text{lng}] \; / - C \begin{bmatrix} +\text{syl} \\ -\text{lng} \\ \propto\text{bk} \end{bmatrix}$$

3.11.3.4. The fact that such a rule exists can be seen after considering thr rule of final vowel shortening (FVS):

$$(\text{FVS}) \quad [+\text{syl}] \rightarrow [-\text{lng}] \; /-(\text{C}) \; \#$$

Rule (FVS) accounts for words like [dünja] </dunjā/< Arabic <u>dunyā</u> 'world', [mowzun]</mavzūn/< Arabic <u>mawzūn</u> 'balanced', etc. Since in such words only the vowel of the final syllable is long, rule (FVS) suffices to derive the normal and informal pronunciations of these words in Azerbaijani. But rule (FVS) does not suffice to derive the normal and informal pronunciations in loans with more than one long vowel. In such words, rule (FVS) does not advance beyond the derivation of formal pronunciations, e.g., rule (FVS) derives the formal [mūsa]< /mūsā/< Arabic <u>mūsā</u> 'Moses', but not the normal and informal [musa]. It is the existence of the normal and informal styles of pronunciations that argues for the already mentioned rule (NFVS). In the following derivations we see the ordered application of the rules (FVS) — (NFVS):

	'Moses'	'Tuba'	'lantern'	'aim'	'surveyer'	'mason'
	/mūsā/	/tūbā/	/fānūs/	/mæ nzūr/	/mæ ssāh/	/bæ nnā/
(FVS)	a	a	u	u	a	a
(NFVS)	u	u	a	—	—	—
	[musa]	[tuba]	[fanus]	[mæ nzur]	[mæ ssah]	[bæ nna]

3.11.3.4.1 There is evidence, however, that nonfinal vowel shortening is not carried out only by the rule (NFVS). In words like [isa] </īsā/< Arabic <u>ʕīsā</u> 'Jesus', [iman]< /īmān/< Arabic <u>īmān</u> 'faith', etc., nonfinal vowel shortening has occurred where despite what rule (NFVS) requires the shortened vowel does not agree with the vowel of the en-

vironment in backness. This evidence helps the simplification of the
rule of nonfinal vowel shortening (NFVS) into a rule which does not
impose the restriction of the backness harmony:

$$[+syl] \longrightarrow [-lng] \ / \ - \ C \ \begin{bmatrix} +syl \\ -lng \end{bmatrix}$$

This rule which is ordered after the rule of final vowel shortening
(FVS), applies optionally. When only (FVS) applies, the formal pronun-
ciation is derived, but when the application of (FVS) is followed by
(NFVS) the normal and informal pronunciations are derived, e.g..:

	'Moses'	'Jesus'	'Moses'	'Jesus'
	/mūsā/	/īsā/	/mūsā/	/īsā/
(FVS)	a	a	a	a
(NFVS)	—	—	u	i
	[mūsā]	[īsa]	[musa]	[isa]
	Formal		normal and informal	

As for the motivation of (FVS) it is noteworthy that no loanword
surfaces with underlying long vowel in the final syllable.

Notes

[1] See rule (HUF) ɨ ⟶ i / # in (3.11.2.1.3).

[2] The second version is non-Tabriz, e.g., Baku, pronunciation.

[3] A few others of this type are: [gaʔræ] gara 'black', [gærrænguš]
garanguš 'swallow', [gælxan] galxan 'shield', [gæšow] gašov 'curry-comb',
[gæmči] gamčɨ 'lash', etc.

[4] A few others of this type are [qejci] qayčɨ 'scissors', [gejiš]
gayɨš 'belt', [gejnær] gaynar 'boiling', [gejitmax] gayɨtmaq 'to return',
etc.

[5] A few others of this type are: [beḳar] / [bikar]< Persian bīkār
'unemployed', [ǧah] / [ǧah]< Persian gāh 'sometimes', [ǧuja] / [ǧūja]<
Persian guyā 'as if, reportedly'. [gælæm]< Arabic qalam 'pen', [gætræ]<
Arabic qaṭra 'drop', [gijāmæt]< Arabic qiyāmat 'resurrection', etc.

⁶ The voiceless velar stop is not characteristic of normal and informal styles in the majority of Azerbaijani dialects except as a result of the devoicing of the first /g/ in a geminate -gg-, and the word [sakɨrkga] 'tick' in Tabriz speech. It is also produced by devoicing the /g/ before the voiceless obstruents and word-finally in poetic style, e.g., [baksan]</bagⁱsan] 'if thou lookst', [jok]</jog/ 'no', etc. In some Azerbaijani dialects like the Zagatala-Gakh, however, according to Shiraliyev (1967:75) the voiceless velar stop often replaces the palatal stop in other dialects as in [komak] in Zagatala-Gakh versus [c̆ ŏmæ x́]/ [k̆ŏmæ x́] 'help' in other dialects. In the Western dialect, too, the voiceless velar stop word-initially corresponds to /g/, e.g., [kɨš] in Western dialects for [gɨš] 'winter' in other dialects.

⁷ With respect to the context-free change of the voiceless velar stop, the rule of (RVS) reveals an asymmetry in synharmony characteristic of the majority (all?) of Azerbaijani dialects. If it is found that there are Azerbaijani dialects with both voiceless palatal stop/alveo-palatal retroflex affeicate [k̆]/[ɟ̆] always occurring with front vowels, and velar stop [k] occurring in the environment of back vowels, the rule of (RVS) must be revised into:

$$
\begin{bmatrix} +cns \\ +bk \\ -cnt \end{bmatrix} \rightarrow [-bk] \ / \ [-bk]
$$

Such a revision may be necessary in the Zagatala-Gakh and Western Azerbaijani dialects (see Shiraliyev (1967:75)).

⁸ The theoretical framework adopted here has been derived from works like Chomsky (1964), Chomsky and Halle (1968), Schane (1971) and Kiparsky (1968). The adoption is partial because no use has been made of the theory of markedness introduced in Chomsky and Halle (1968).

The proposed derivation of [c ʒ c̆ ɟ̆] from /č ǰ k̆ g/ receives theoretical support from works like Kisseberth (1969) and Hyman (1970).

⁹ A town in Northern Azerbaijan, near the border of Southern Azerbaijan.

¹⁰ Except in monosyllabic loans where the g is preceded by a liquid, a nasal, or a continuant, e.g., [bæ rg]< Arabic barq 'electricity', [fæ rg]< Arabic farq 'distinction', [ešg]< Arabic ʕisq 'love', [rizq]< Arabic rizq 'provision', [masg]< French masque 'mask', [tang]< Russian tank 'tank', also in polysyllabics in careful speech, e.g., [šæ fæ g] Arabic šafaq 'twilight.'

Post vocalic g's, however, in many loans obey the native rule. Hence, we have [šæ fax] 'reflected light'< Arabic šafaq (?), [axmax]< Arabic aḥmaq 'fool', [tabax]< Arabic tabaq 'platter', [væ rax]< Arabic waraq 'leaf, sheet.'

¹¹ We take the orthographic symbol ڭ for voiced velar stop /g/ to be the underlying segment. This is supported by the fact that the

proposed underlying /g/ in literary pronunciation is [g] finally and before voiced segments, e.g., <u>otag</u> [otag] 'room' otagda [otagda] 'in the room'. While this seems a sufficient reason for positing /g/ as the underlying form, additional support may come if it is found that the few final [g]'s appearing in the stories quoted by Shirāliyev are not typographical errors for [g]'s. Forms with final [g] can be found in the texts quoted by Shirāliyev (1967) from the <u>Baku dialect</u>, e.g., [guragḷɨg] 'drought' (p. 359); <u>Mārzā region</u> [gulag] 'ear' (p. 369); <u>Mughan group dialects</u>: [axmag] 'fool' (p. 373), [anjag] 'only' (p. 374), [usag] 'child' (p. 376); <u>Göyčay region</u>: [dogrutmag] 'to materialize' (p. 377); <u>Nakhchɨvan dialect</u> [anjag] 'only' (p. 402).

[12]In the Northern literary dialect the word for 'hawk' is [guzgun]. The existence of other words with a [g] after a sonorant or a voiced frica- tive (e.g., [dalga] 'wave', [vurgun] 'in love', [jangɨ] 'thirst, fire', [sajgɨ] 'care', etc.) suggests the presence of a rule in the literary dialect that spirantizes the syllable-initial /g/ which is preceded by a vowel, sonorant, or a voiced fricative segment, i.e., a segment belonging to the class specified [+vce, +cnt]. However, this does not seem to be an exceptionless rule because of the existence of words like [algɨs] 'applause', [ilgar] 'vow, promise' and perhaps a few others. All of the examples have been taken from Āzizbākov (1965).

[13]We interpret the terms 'popular' as 'normal', and 'popular literary' as a style with features from both the 'formal' and 'normal' styles of speech. See 1.17 for our understanding of the 'formal', 'normal' and 'informal' styles of speech.

[14]Page references are to Shirāliyev (1967).

[15]Emre's hypothesis (and indirectly our positing long underlying vowels for Azerbaijani) seems to receive support from the following by Baitchura (1975:104):

>   Our data and especially the distinctive features
>   established by means of instrumental and phonologic
>   investigations, enable one to reconstruct the Common
>   Turkic or Preturkic vocalism <u>as having 16 vowels</u>:
>   a, æ/e, u, ü, o, ö, I, i, ā, ǣ/e, u, ū, o, ö, Ī, ī
>   and thus may be corroborated by the reconstructions by
>   M. Räsänen, N. N. Poppe, W. W. Radloff and K. H. Menges.

[16]Historically, as if by a process perhaps consisting of a change roughly like c→[+vce]/v̄- followed by the change v→v/-[+v̄ce], long vowels have been reduced to the length of the nonlong vowels, e.g., the 11th century Turkic forms [gāp] 'dish' (Emre, 1949:65), [at] 'name', [kōk] 'sky', [āč] 'hungry' (p. 61), are [gab], [ad], [gój]/[ǵoj], [aj]/[aʒ], respectively in Azerbaijani.

[17]For a full treatment of the phonetic variants of Azerbaijani vowels see Akhundov (1973:108-39).

[18]As for the status of /ɨ/ as an underlying segment it is to be noted that despite its change to [i] word-initially and finally in Tabriz

speech, /ɨ/ does occur in these positions in many Azerbaijani dialects. E.g., in the literary dialect it occurs finally and in the Western dialects it apparently occurs both initially and finally (see note 2, Chapter 2).

[19]The rule could be $\begin{Bmatrix} ü \\ u \end{Bmatrix} \rightarrow i/-\#$ if we consider the few monosyllabic forms ending in the high back round vowel, e.g., [su] 'water', [bu] 'this', [ju] 'Wash!' as exceptions. Except for the variant [bɨ] for [bu] 'this', the unrounding of the high back round vowel apparently does not take place.

[20]For the appearance of the transition glide see Chapter 4.

[21][ana] and [næ næ] 'mother' are synonyms.

Table 1. Azerbaijani underlying consonants

	p	b	f	v	m	t	d	n	s	z	l	r	č	ǰ	š	ž	j	k	g	x	h	?*
Syllabic	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Consonantal	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Sonorant	-	-	-	-	+	-	-	+	-	-	+	+	-	-	-	-	-	-	-	-	-	-
Nasal	-	-	-	-	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
High	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+	+	+	-	-	-
Back	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	-	-
Low	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+
Anterior	+	+	+	+	+	+	+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-
Coronal	-	-	-	-	-	+	+	+	+	+	+	+	+	+	+	+	-	-	-	-	-	-
Voiced	-	+	-	+	+	-	+	+	-	+	+	+	-	+	-	+	+	-	+	-	+	-
Continuant	-	-	+	+	-	-	-	-	+	+	+	+	-	-	+	+	+	-	-	+	+	-
Lateral	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
Strident	-	-	+	+	-	-	-	-	+	+	-	-	+	+	+	+	-	-	-	-	-	-

*Although 'the glottal stop is to be considered among the genuine Turkic sounds' (Baitchura, 1975:88) we do not need an underlying glottal stop for native words but we need it in loanwords to replace an Arabic voiced pharyngeal fricative.

Table 2. Azerbaijani underlying vowels

	i	ü	ɨ	u	e	ö	o	æ	a	ī	ǖ	ɨ̄	ū	ē	ȫ	ō	ǣ	ā
Syllabic	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Consonantal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
High	+	+	+	-	-	-	-	-	-	+	+	+	-	-	-	-	-	-
Back	-	-	+	+	-	-	+	-	+	-	-	+	+	-	-	+	-	+
Low	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	+	+
Round	-	+	-	+	-	+	+	-	-	-	+	-	+	-	+	+	-	-
Long	-	-	-	-	-	-	-	-	-	+	+	+	+	+	+	+	+	+

Table 3. The phonetic chart of the Azerbaijani consonants and vowels

	bilabial	labiodental	dental	alveolar	retroflex	alveopalatal	palatal	velar	glottal			
Stops	p		t					k	?	ordinary vowels		long vowels
	b		d					g				
Fricatives		f	s		ś	x́	x	h		i ü ɨ u		ī̱ ū̱ ɨ̱̄ ū̱
		v	z ɻ ż	ž	j	g̱				e ö o		e̱ o̱
Affricates			c		ʒ̑					æ a		æ̱ ā̱
			ʒ		d̑ʒ							
Nasals	m		n									
Lateral			l									
Flap			r									
Glides	w̱w					y						

CHAPTER IV

AZERBAIJANI PHONOLOGICAL RULES

4.1. This chapter is an attempt at presenting the phonological
rules which, applying to the underlying segments of Azerbaijani words,
derive the pronunciation of the Tabriz dialect of Azerbaijani.

Some of the rules have already been presented in chapters two and
three. We have seen some of the basic rules like the rules which derive
the phonetic forms of the Azerbaijani underlying segments, the rules of
vowel lengthening, diphthongization, vowel sequences, etc.. Since such
rules have been discussed relatively exhaustively, they will not be
repeated here. When they are involved in derivations, references will
be given to the sections in which they were motivated.

Below are presented the rules of vowel harmony, stress assignment,
assimilations, additions, deletions, and a number of other rules which
seem to be responsible for the pronunciation of Tabriz speech.

4.1. Vowel Harmony: Vowel harmony in Turkic languages, including
Azerbaijani, is the backness/frontness or roundness/unroundness agreement
among the vowels of a word. Generally speaking, descriptions of vowel
harmony by generative phonologists have assumed vowel harmony to be an
assimilation process directed from the root to the suffixes of a word.
Consequently, to specify the vowel harmony in roots, there have been two
approaches: (1) specifying all the vowels of the roots for backness/
frontness feature by the abstract feature [+BACK]/[-BACK], (2) specifying

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the first or the last vowel of the root for the feature in question and
deriving it for the other vowels in the roots as well as the suffix vowels
by a rule of progressive or regressive assimilation.

As Kiparsky (1968) argues, neither of these approaches fully accounts
for vowel harmony. Briefly, both of the root marking approaches ignore
the theory of markedness[1] which requires the full specification of every
feature in the lexical representations. Further, because of the differences
in the restrictions upon the occurrence of vowels in roots and suffixes,
one rule cannot account for vowel harmony both in the roots and suffixes
(see Kiparsky (1968) for a detailed discussion of these points).

In contradistinction to these approaches to the description of
vowel harmony, Kiparsky introduces another approach in agreement with
the theory of markedness, employing a rule of assimilation and the
relevant morpheme structure condition.

In the following account of vowel harmony in Azerbaijani we adopt
Kiparsky's approach. Accordingly, unlike the two root marking approaches,
following Kiparsky's (1968) proposal, all the nine vowels of Azerbaijani
will be fully specified in the roots, but the vowels in the suffixes
listed in the lexicon will be from the two vowels /i a/. If the vowels
in a suffix contrast in backness with that of the last vowel in the
root, a rule of progressive assimilation from root to suffix will
establish the vowel harmony. E.g., the plural suffix will be /lar/
which will be realized as such when added to a word with a back vowel in
the last syllable of the root as in [k̂itaplar]</kitab+lar/ kitablar
'books' and the suffix of the presumptive past[2] will be /imiš/, but will
be realized as [miš], [mɨš], [müš] and [muš] by the progressive
assimilation directed from the last stem vowel, e.g., [bilirmiš]<

/bil+ir+imiš/ '(presumably) he knew', [jazɨrmɨš]</jaz+ir+imiš/ <u>yazɨrmɨš</u>
'(presumably) he was writing', [düzürmüš]</düz+ir+imiš/ <u>düzürmüš</u>
'(presumably) he was arranging', [dujurmuš] /duj+ir+imiš/ <u>duyurmuš</u>
'(presumably) he was surmising.'

4.1.1. As these examples show, the rule of vowel harmony should
reflect the harmony of the suffix vowels with the last stem vowel in
backness and roundness. The following rule seems to be the active rule
of backness and roundness harmony in suffixes (SVH).

$$(SVH) \quad \begin{bmatrix} +syl \\ +hi \end{bmatrix} \rightarrow \begin{bmatrix} \propto bk \\ \langle \beta rnd \rangle \end{bmatrix} / \begin{bmatrix} +syl \\ \propto bk \\ \langle \beta rnd \rangle \end{bmatrix} (c)+(c)-$$

Left-to-right iterative

This rule states that the suffix vowel will acquire the backness
feature of the last stem vowel, and that when the suffix vowel is the
high front /i/, it also acquires the roundness feature of the last stem
vowel. The application of the rule of suffix vowel harmony is reflected
in the following derivations (the word for 'neighbor' is gonšu, the
suffixes in the word for 'also those in our neighborhood' are: /lig/
abstract noun suffix, /im/ first person singular genitive suffix, /iz/
plural suffix for the first and second person genitive suffix, /da/
location suffix, /ki/ post location/time suffix of relation, /lar/ plural
suffix, /i/ accusative case suffix, /da/ conjunctive suffix; the word
for 'meeting' is görüš and the new elements in the word for 'also those
in our meetings' are: /gör/ 'see', /iš/ verbal noun suffix):

'also those in our neighborhood'
/gonʃu+lig+im+iz+da+ki+lar+i+da/

(RVS)(3.2.11)			ḱ	ɨ́
(TCFR)(3.2.12)			ʤ̑	
(SYH)(4.1.1)	u	u	ɨ	ɨ
(HVSS)(3.6.4.1)		ŋ		

[gonʃulugumuzdaʔkˆilarɨda]

'also those in our meetings'
/gör+iʃ+lar+ïm+iz+da+ki+lar+ï+da/

	g		ḱ	
	ʤ̑		ʤ̑	
ü	æ	æ	æ	æ

[ʤ̑örüʃlaerimizdaʤ̑ʃilaerɨdaə]

4.1.2. The development of vowel harmony in loans with greater degrees of nativization is accounted for by a rule of assimilation as follows. We may call this the nativization root vowel harmony (NRVH):

$$(NRVH) \quad \begin{bmatrix} +syl \\ \langle +hi \rangle \end{bmatrix} \rightarrow \begin{bmatrix} \varkappa\, bk \\ \langle \beta\, rnd \rangle \end{bmatrix} \quad / \quad c \begin{bmatrix} \varkappa\, bk \\ \beta\, rnd \end{bmatrix} c$$

Note that by Bach's (1968) 'neighborhood convention' this rule reflects the collapsed form of the following two rules:

(a) the progressive root vowel harmony (PRVH)

$$(PRVH) \quad \begin{bmatrix} +syl \\ \langle +hi \rangle \end{bmatrix} \rightarrow \begin{bmatrix} \alpha\, bk \\ \langle \beta\, rnd \rangle \end{bmatrix} / \begin{bmatrix} \alpha\, bk \\ \beta\, rnd \end{bmatrix} c -$$

This rule is responsible for vowel harmony in derivations like the following (the words for 'car' comes from the French *machine*, and the words for 'celery' and 'flower garden' come from the Persian *karafs* and *golestan*):

	'car'	'celery'	'flower garden'
	/mašīn/	/kæ ræ fs/	/gulistan/
(RVS)(3.2.11)		k´	g´
(TCFR)(3.2.12)		$\hat{f}$š	$\hat{g}$
(FVS)(3.11.3.4)	i		
(/f/-voicing)(4.7.12)		v	
(Diph)(2.6.5.2)		ȯw	
(i-ep)(4.7.6)		i	
(FSV)		z	
(Vce-Diss)(4.6.1)			d
(NRVH)(4.1.2)	ɨ	ü	ü
	[mašɨn]	[$\hat{f}$æ rowüz]	[$\hat{g}$ülüsdan]

Note that in [βæröwüz] there is a mid vowel in noninitial syllable. This is apparently permitted when the mid vowel is followed by a homorganic glide, e.g., [bilöw]</bilev/ bilov 'whetstone' (for more information about the appearance of round mid vowels in noninitial syllables see 2.3.5-5 and Chapter 2 note 6).

(b) the regressive root vowel harmony (RRVH)

$$(RRVH) \quad \begin{bmatrix} +syl \\ \langle +hi \rangle \end{bmatrix} \rightarrow \begin{bmatrix} \propto bk \\ \langle \beta rnd \rangle \end{bmatrix} \Big/ - c \begin{bmatrix} \propto bk \\ \beta rnd \end{bmatrix}$$

This rule is responsible for vowel harmony in derivations like the following (The words for 'mug' and 'sun-flower seed' come from the Russian Kruzka and semecko):

	'mug'	'sun-flower seed'
	/grušga/	/sɨmɨčga/
(MSR)(4.2)	/	/
(Spir)(4.4.1)		š
(i-ep)(4.7.6)	i	
(NRVH)(4.1.2)	u	
	[gurušga]	[sɨmɨšga]

It is to be mentioned that although this rule of (NRVH)(4.1.2) does not predict the direction of the application of vowel harmony, it seems that on the basis of the following derivations harmony is to a [+back] vowel.

	'machine' /mašīn/	Adam /ādæm/	'paper' /kāgæz/	'comfortable' /rāhæt/	'hot bath' /hæmām/	'cinema' /sīnema/	'lemon' /līmū/	(proper name) Kazīm /kāzīm/
(RVS)(3.2.11)			ḱ					ḱ
(TCFR)								
(FVS)(3.11.3.4)	ī						u	
(NFVS)(3.11.3.3)		a	a	a	a	a	ī	a
(HVSS)(3.6.4.1)			g			a		
(NRVH)(4.1.2)	i̇	a	a	a	a		u	ɨ
(HU)(3.11.2.2)							ɨ	
(HUF)(3.11.2.1.3)							i	
	[mašīn]	[adam]	[ǩagaz]	[rahat]	[hamam]	[sinama]	[lumi]	[ǩazɨm]

This observation, however, is to be modified with regard to three points. First, a tendency which perhaps is unformulatable at the present allows the occurrence of the high front vowel /i/ in the initial syllable, and the low back vowel /a/ in the final syllable of some words in Azerbaijani, e.g., [tiǩan] tikan 'thorn', [sican] siǩan 'mouse', [dæjirman] dägirman 'mill', [picax] biǩag 'knife', etc.. Secondly, just as the backness harmony seems to be directed from the back vowels to the nonback vowels in the root, the height harmony, too, (which compared with the backness and roundness harmonies is less binding) seems to be directed from the high back vowel /u/, e.g., [tilifun]< telefun</telefon/ English telephone. Thirdly, the presence of a [+hi, -bk] stop seems to affect vowel harmony in the form of fronting the /a/ to [a] and the /u/ to [u] in some words as shown in the following derivations. We suggest to call this synharmonic change the palatal assimilation (P-Ass): (all the loans come from Persian)

	'caravan'	'short'	'factory'	'jug'	'shop'
	/kārvan/	/kūtah/	/kār#xāne/	/kūze/	/tokan/
(RVS)(3.2.11)	k	k	k	k	k
(TCFR)(3.2.12)	ǩ	ǩ	ǩ	ǩ	ǩ
(FVS)(3.11.3.4)		a			
(NFVS)(3.11.3.3)	a	u	a a	u	
(P-Ass)(4.1.3)	æ	ü	æ	ü	ü
(MVC)(4.7.1)			æ a		
(NRVH)(4.1.2)			a		

[ǩærvan] [ǩütah] [ǩærxana] [ǩüzæ] [tüǩan]

4.1.3. The (P-Ass) may tentatively be formulated according to Bach's (1968)'neighborhood convention' as follows:

$$(\text{P-Ass}) \quad \begin{bmatrix} +syl \\ \left\langle \begin{bmatrix} -hi \\ -lo \\ +rnd \end{bmatrix} \right\rangle \end{bmatrix} \rightarrow \begin{bmatrix} -bk \\ \langle [+hi] \rangle \end{bmatrix} \ / \ \begin{bmatrix} -cnt \\ +hi \\ -bk \\ -vce \end{bmatrix}$$

This rule states that back vowels are fronted in the environment of the [k] (which later becomes [ǩ] in Tabriz). When the back vowel is the /o/, it is both raised and fronted to [u]. Note that (P-Ass) is a minor rule inapplicable to many words including [aɣaz]</kāgæz/ <u>kaĝaz</u> Persian <u>kāĝæz</u> 'paper', [maʂ̂ina]</makina/ 'machine, gaget'< ? etc.

4.1.4. Reference should also be made to an 'unrounding harmony' (UH) as witnessed in the following derivations of the words for 'cigarette' and 'musician' from the Russian <u>papirosa</u> and <u>muzɨkant</u>:

	'cigarette'	'musician'
	/papiros/	/muzɨgan/
(MVC)(4.7.1)	u	
(NRVH)(4.1.2)	u	
(UH)(4.1.4)	ɨ ɨ	ɨ
(Syncope)(4.7.3)		∅
(FSV)(4.7.11)	z	
	[papɨrɨz]	[mɨzgan]

To the sketch of vowel harmony a note must be added concerning a major source of the breach of vowel harmony in some dialects of Azerbaijani. In some dialects of Azerbaijani including the Tabriz dialect, the first person plural personal suffix of the imperative mood [ax], the first person plural personal suffix of the very 'to be' [ux], the futurity suffix [aʒax], the comparative adjective or adverb suffix [rax], the abstract noun forming suffix [lɨx], and some others, have exclusively back vowels. In some other dialects of Azerbaijani including

the Baku dialect there is a reverse tendency. E.g., in the Baku dialect
the infinitive suffix has exclusively the low front vowel (see Shiräliyev,
1967:63).

The breach of vowel harmony is also encountered among a considerable
number of loanwords which have not been thoroughly nativized. The
following examples represent such loans with the breach of vowel harmony:
[āgil] < /agil/ < Arabic ςāgil 'wise', with a breach of backness harmony;
[televizijon] < /televizion/ < French television 'television', with the
breach of the constraint, implemented by the rule of mid vowel change
(MVC), which prohibits the occurrence of the mid vowels in noninitial
syllables; and [isdiᵏan] < /stakan/ < Russian stakan 'tumbler', with the
breach of backness harmony.

As for accounting for the vowel harmony breaches, presently, we do
not find a simpler way than adopting Jensen's (1972) solution, i.e.,
specifying the unharmonious segment in the morphemes with the relevant
[-VH] feature in the lexicon. E.g., the word for 'thorn' will be /tikan/,
                                                                    [-BH]
the word for 'television' will be /televizion/ and the infinitive suffix
                                            [-MVC][-MVC]
will be /mag/.
        [-BH]

4.2. Stress assignment: In Azerbaijani words, stress usually falls
on the last syllable except when it is stopped before a number of suffixes
which after Lightner (1972), we call 'unstressable suffixes.' E.g., a
word like alıšdılár 'they were kindled' is stressed on the vowel of the
last syllable because, with regard to stress assignment in Azerbaijani,
word boundary plays the role of the sole unstressable unit in this word.
But in alıšmadılar 'they were not kindled' the main stress has been
stopped by -ma (negative marker) which is one of the unstressable
suffixes.

Main stress assignment in Azerbaijani seems to be adequately de-
scribable by Lightner's (1972:357) Turkish stress rule:

(MSR) $V \rightarrow$ [+stress]$/-C_0$ [-MSR], where [-MSR] stands for any unit

which is an exception to MSR, and the application of the

rule is iterative, right-to-left.

To make correct use of this rule, as Lightner himself observes,

a convention proposed in SPE needs to be adopted:

> When primary stress is placed in a certain position, then,
> all other stresses in the string under consideration at
> that point are automatically weakened by one. (Chomsky
> and Halle, 1968:16-17)

Now, we get alíšdílár by the above MSR, and alíšmadílár by the

iterative application of the MSR. The first application of the MSR gives

*alíšmadílár. But since there is another environment, i.e., the presence

of the negative marker -ma- an unstressable suffix for the application

of the rule, it reapplies giving *alíšmadílár which in turn is changed

to alíšmadílár because the second assignment of primary stress reduces

the primary stress on the last syllable to secondary stress.

Let us look at another example:

#ʔ#æl+mae+miš+di+laer #   'they had not come'

MSR 1)   1

   2)   1   2

   3)   1   2   3

   [ʔael lmaemišdilaer]

This example has three unstressable units, i.e., the word boundary

(which despite having the feature [-segment] (Chomsky and Halle, 1968:66),

plays the role of an unstressable unit in Azerbaijani), the past tense

marker di, and the negative marker ma. The MSR applies first to the

rightmost syllable before an unstressable unit, hence the vowel of the

last syllable is stressed. Since there are two other unstressable units,
i.e., <u>di</u> and <u>ma</u>, the application of the rule is twice iterated from right
to left; and each time a different vowel receives primary stress, the
previous primary stress is reduced.

4.2.1. The MSR of Azerbaijani seems to be almost exceptionless.
The few exceptions to it, too, appear to be classifiable into two groups:
(1) those words that are always stressed on the initial syllable, and (2)
those words that can be stressed on the first <u>or</u> the last syllable.

To the first group which has to be specified in the lexicon as
carrying initial stress belong (a) a handful of adverbs like [ánʒax]<
<u>anjag</u> 'only', [dűnæn] <u>dunan</u> 'yesterday', [bújün] <u>bu gün</u> 'today',
[bælʒǽ] <u>bälkä</u> 'so that, perhaps', (b) a few compounds like [géjnana]
<u>gayɨnana</u> 'mother-in-law', [géjnata] <u>gayɨnata</u> 'father-in-law.'

To the second group, also to be specified in the lexicon accordingly,
belong (a) nouns in the vocative mood, e.g., [ána]~[aná] 'Mother!' etc.,
and (b) some adverbs like [búrda]~[burdá] <u>burada</u> 'here', [hámmɨsi]~
[hammɨsí] <u>hamɨsɨ</u> 'all of it/them', etc..

Beyond these there do not seem to be exceptions to Azerbaijani MSR
cited above. It is noteworthy that MSR is one of the basic rules for
the nativization of loanwords.

4.2.2. With the exception of the just mentioned two groups that
do not obey the Main Stress Rule of Azerbaijani, or obey it optionally,
all the Azerbaijani words undergo the MSR.

When they form compounds or noun phrases, words do not retain the
stress pattern of their isolated state, because it yields to the stress
pattern of the new grammatical unit. Thus, in compound nouns the MSR
is applied to the whole compound structure, and this removes the primary

stress from the adjective while confirming the main stress of the noun.

E.g., in isolation the words [áğ] 'white' and [bircǽx] 'hair' individually

obey the main stress rule, but when they form the compound [àğbircǽx]

'the white haired one' the whole new word is subjected to the Main Stress

Rule, and the final syllable of this new word receives the main stress.

In noun phrases, on the contrary, the primary stress of the adjective

component is confirmed while the noun component of the NP loses its primary

stress. E.g., when they form the noun phrase 'white hair', the words

[áğ] 'white' and [bircǽx] 'hair' find a new stress pattern [áğbircæ̀x]

where the adjective component of the NP receives the main stress.

4.2.3. The stress assignment in the compound nouns and NP's can

be explained by the following rules based on the model of similar rules

in Chomsky and Halle (1968:17):

$$\text{(CSR)} \quad V \rightarrow [+\text{stress}] \; / \; . \; . \; . \overset{1}{V} . \; . \; . —]_N$$

$$\text{(NPSR)} \quad V \rightarrow [+\text{stress}] / — \; . \; . \overset{1}{V} . \; . \; .]_{NP}$$

The compound stress rule (CSR) reassigns primary stress to the

second of the two primary stresses in a compound in Azerbaijani. In

other words, in Az. compound nouns the primarily stressed vowel is that

of the second word. And the noun phrase stress rule (NPSR) reassigns

primary stress to the primary stress of the first of the two primarily

stressed words in a noun phrase. I.e., in Azerbaijani noun phrases, the

primarily stressed vowel is that of the first word.

The assignment of the main stress in compound nouns and noun

phrases may be exemplified as follows:

	'white'	'hair'		'white'	'hair'
	$[_A[ag]_A]_N$	$[_N{}^{bircæ\acute{x}}]_N$		$[_{NP}{}_A[ag]_A]_A$	$[_N{}^{birca\ x}]_N]_{NP}$
(MSR)	1	1		1	1
(CSR)	2	1			
(NPSR)				1	2
	[àgbircǽ x́]			[àgbircà x́]	
	'the white haired one'		'white hair'		

4.3. Rules of cluster simplification: Consonant clusters consisting
of two consonants are quite common medially, of restricted occurrence
finally, and nonexistent initially in the Tabriz dialect of Azerbaijani.
This basic tendency in Tabriz speech is reflected in well assimilated
loanwords. E.g., the words 'club', 'American', and 'sport' in their
Azerbaijani version clearly reflect the permitted consonant cluster
pattern in Azerbaijani. In [gulup] and [isport] epenthetic vowels have
broken up the unpermitted initial clusters; the liquid + stop cluster of
'sport', which corresponds with admissible final clusters in Azerbaijani,
has been accepted, and the vcvcvcvc structure of _American_ has changed to
vcvccvc as a result of the application of the syncope rule (4.7.3). This
creates a permissible medial cluster in [amɨrgan] in accordance with the
pattern of medial bisegmental clusters in Azerbaijani.

In normal and informal styles of speech, many of the word-final
and medial clusters are simplified, e.g., [üs]</üst/ 'top', [at]</alt/
'under', [üsdæ]</üst+da/ 'on', [atda]</alt+da/ 'under' (adv.).

4.3.1. Word-final and medial clusters in Azerbaijani are
simplified in Azerbaijani by the following rules:

$$(\text{Son-Del}) \quad \begin{bmatrix} +son \\ +cor \end{bmatrix} \rightarrow \emptyset \ / \ \text{—} \ \left\{ \begin{matrix} \begin{bmatrix} -cnt \\ -bk \\ -lo \end{bmatrix} \\ \begin{bmatrix} +bk \\ +cnt \\ -vce \end{bmatrix} \end{matrix} \right\} \left\{ \begin{matrix} [-syl] \\ \# \end{matrix} \right\}$$

This rule by deleting the sonorant segment before affricates, stops
(except before glottal stop and velar stops), and the voiceless alveolar
and velar fricatives accounts for the simplification of the consonant
clusters in the following sample derivations. The feature [-lo] is
needed to block the application of the rule to words like [mæn] < /mæn?/
< Arabic manʕ 'prohibition', [šær] < /sær?/ < Arabic šarʕ 'sacred law.'
And the feature [-bk] is needed to block the application of the rule to
words like [bærg] < /bærg/ < Arabic barq 'electricity', [tælg] < /tælg/
< Arabic talq 'talc', [taŋg] < /tang/ < Russian tank 'tank'. In the
following derivations the words for 'lesson' and 'heart' come from the
Arabic dars and qalb, and 'bitter' comes from Persian [taʕlx].

	'lesson'	'heart'	'wolf'	'radish'	'under'	'gutter'
	/dærs/	/gælb/	/gurd/	/turb/	/alt/	/ærx/
		[-syn]				
(RVS)(3.2.11)						
(Son-Del)(4.3.1)	∅	∅	∅	∅	∅	∅
(Devoicing)(4.4.2)		p	t	p		
	[dæs]	[gæp]	[gut]	[tup]	[at]	[æx]

	'bitter'	'firm'	'jaw'	'measure'	'calm'
	/taʕlx/	/bærk/	/æng/	/ölč/	/dinǰ/
(RVS)(3.2.11)		ḱ	ǵ		
(Son-Del)(4.3.1)	∅	∅	∅	∅	∅
(Devoicing)(4.4.2)		x́	x́	š	š
	[taæx]	[bæx́]	[æx́]	[öš]	[diš]

4.3.2. Two other rules of cluster simplification in Azerbaijani are described in the following paragraphs:

4.3.2.1. According to one rule the [+ant, +cor, -cut] segments are deleted if they follow a fricative and occur preconsonantally or word-finally. This is the rule of stop deletion (Stop-Del):

$$\text{(Stop-Del)} \quad \begin{bmatrix} +cns \\ +ant \\ +cor \\ -cnt \end{bmatrix} \rightarrow \emptyset \ / \ \begin{bmatrix} -son \\ +cnt \end{bmatrix} - \begin{Bmatrix} [-syl] \\ \# \end{Bmatrix}$$

This rule accounts for the final cluster simplification in native and loan word such as in the following derivations (the words for 'petroleum' and 'present' come from the Persian <u>naft</u> and the Arabic <u>naqd</u>. <u>Rasht</u> and <u>Yazd</u> are cities in Persia.):

	'shoe'	'top'	'petroleum'	'present'	Rasht	Yazd
	/čust/	/üst/	/næft/	/nægd/	/ræšt/	/jæzd/
(Spir)(4.4.1)				g		
(TCFR)(3.2.12)	c					
(Stop-Del)(4.3.2.1)	∅	∅	∅	∅	∅	∅
	[cus]	[üs]	[næf]	[næg]	[ræš]	[jæz]

4.3.2.2. According to another rule, the post consonantal glottal stop and fricative are deleted preconsonantally and word-finally. We may call this the rule of low consonant deletion (LCD):

$$\text{(LCD)} \quad \begin{bmatrix} +cns \\ +lo \end{bmatrix} \rightarrow \emptyset \ / \ [+cns] - \begin{Bmatrix} [-syl] \\ \# \end{Bmatrix}$$

The application of this rule is reflected in the following derivations. All the loans come from Arabic:

	'rub'	'victory'	'one-fourth'	'collection'	'part'	'law'
	/mæsh/	/fæth/	/rub?/	/jæm?/	/jüz?/	/šær?/
(TCFR)(3.2.12)				ʒ	ʒ	
(LCD)(4.3.2.2)	∅	∅	∅	∅	∅	∅
	[mæs]	[fæt]	[rub]	[ʒæm]	[ʒüz]	[šær]

The rules (Son-Del), (Stop-Del), and (LCD) account also for cluster simplification in the words with medial three-consonant clusters, as in (/dan/ is the ablative suffix; /li/ indicates possession; /či/ indicates profession):

	'sixty'	'pygmy'	'from above'	'with shoes on'	'mail carrier'
	/altmɨš/	/jɨrtdan/	/üst+dan/	/čust+li/	/post+či/
(TCFR)(3.2.12)		ʒ		c	c
(Son Del)(4.3.1)	∅	∅			
(Stop-Del)(4.3.2.1)			∅	∅	∅
(SVH)(4.1.1)			æ	u	u
(HU)(3.11.2.2)				ɨ	ɨ
(HUF)(3.11.2.1.3)				i	i
	[atmɨš]	[ʒɨtdan]	[üsdæn]	[cusli]	[posci]

4.4. Other processes: The following are the rules of spirantization, devoicing, assimilation, and dissimilation which are productive in Tabriz speech.

4.4.1. Spirantization: affricates and [+high] stops /č ǰ/, [ḱ ǵ] and /g/ are spirantized preconsonantally and word-finally, in many dialects of Azerbaijani, including the Tabriz dialect, by the following rule:

$$
(\text{Spir}) \quad
\begin{bmatrix} +\text{cns} \\ +\text{hi} \\ \left\{\begin{matrix}[-\text{bk}]\\ +\text{bk}\end{matrix}\right\} \\ +\text{vce} \end{bmatrix}
\rightarrow [+\text{cnt}] \ / \ v— \begin{Bmatrix} [-\text{syl}] \\ \# \end{Bmatrix}
$$

This rule accounts for the following derivations in normal and informal style of speech in the Tabriz dialect.

/üč#dörd//üč//güǰ+li//güǰ//kæklik//gög//gonag//ušag+lar/

(RVS)(3.2.11)		ǵ		ǵ	ḱ	ḱ	ḱ	ǵ ǵ	
(Spir)(4.4.1)	š		š	ž		ž	x́	x́	j
(Devoicing)(4.4.2)	t							x	x
(TCFR)(3.2.12)				ǰ̑	ǰ̑		ǰ̑		
(SVH)(4.1.1)			ü						
(HU)(3.11.2.2)			i						
(j-rnd)(4.7.8)							ẃ		

[üšdört][üš][ǰ̑üžli][ǰ̑üž][ǰ̑æx́lix́][ǰ̑öẃ][gonax][ušaxlar]

4.4.2. Devoicing: The existence of pronunciations like [bošgap] </bošgab/ bošgab 'plate', [murat]</murad/<Arabic Murad, [bulax]</bulag/ bulag 'water spring', [oruš]</oruǰ/ oruj 'fasting', [tabaxci] /tabag+či/ tabagči 'street vendor', [orušlux]</oruj+lig/ orujlug 'fasting period', etc., indicates the existence of a rule in Azerbaijani by which all stops and affricates constituting the final segment of a polysyllabic stem are devoiced. A general rule like[3]:

$$\begin{bmatrix} -son \\ -cnt \end{bmatrix} \rightarrow [-vce] \ / \ cvcv - \left\{ \begin{matrix} [-syl] \\ \# \end{matrix} \right\}$$

which includes all the stops and affricates cannot account for all the above mentioned derivations. It can account for the nonhigh stops which are devoiced into their corresponding voiceless counterparts, but not for the high stops and the affricate whose devoicing in many Azerbaijani dialects including the Tabriz dialect is inseparable from spirantization. Hence the above general rule, which perhaps does exist in some Azerbaijani dialects, in the case of some other dialects of Azerbaijani, including

the Tabriz dialect, needs to be revised into the following form which
accounts for both the nonhigh stops and the high stops and affricate in
the cited words above:

$$\text{(Devoicing)} \begin{bmatrix} -son \\ -cnt \\ \alpha hi \end{bmatrix} \rightarrow \begin{bmatrix} -vce \\ \alpha cnt \end{bmatrix} / \text{ cvcv } - \left\{ \begin{matrix} [-syl] \\ \# \end{matrix} \right\}$$

4.4.2.1. This rule is the collapsed form of the following two rules
of nonhigh stop devoicing (NHSD) and high stop and affricate spirantization
and devoicing (HSASD).

The rule of nonhigh stop devoicing is:

$$\text{(NHSD)} \begin{bmatrix} -son \\ -cnt \\ -hi \end{bmatrix} \rightarrow [-vce] / \text{ cvcv } - \left\{ \begin{matrix} [-syl] \\ \# \end{matrix} \right\}$$

As the structural description of (NHSD) shows, this rule does not
apply to the fricatives in Tabriz speech. This can be deduced from the
existence of the pronunciations like [bilow̃] < /bilev/ bilov 'whetstone',
[namaz] < /næmāz/ < Persian nāmāz 'worship', [ejvæz] Eyväz (proper name),
[garaž] < /garaž/ < French garage, etc..

4.4.2.2. The rule of high stop and affricate spirantization and
devoicing (HSASD) is:

$$\text{(HSASD)} \begin{bmatrix} -son \\ -cnt \\ +hi \end{bmatrix} \rightarrow \begin{bmatrix} -vce \\ +cnt \end{bmatrix} / \text{ cvcv } - \left\{ \begin{matrix} [-syl] \\ \# \end{matrix} \right\}$$

The application of the (NHSD) and (HSASD) is reflected in the
following derivations:

	(proper name)	'wing'	'guest'	'fasting'
	/zejnæb/	/ganad/	/gonag/	/oruǰ/
(NHSD)(4.4.2.1)	p	t		
(HSASD)(4.4.2.2)			x	š
	[zejnæp]	[ganat]	[gonax]	[oruš]

4.4.3. Note, however, that the spirantization and devoicing of the voiced affricate /ǰ/ and the high nonback [ǵ] is not restricted to the environment of the rule of high stop and affricate spirantization and devoicing (HSASD). These segments are spirantized and devoiced morpheme-finally after sonorants, e.g., [mæš]</mærǰ/ marǰ 'bet', [ǵüx́]/[ǵüx́] güng 'pipe', [narɨš]</nārinǰ/<Persian nārenǰ 'sour orange.' Note that this in addition to spirantization and devoicing of the stops and the affricate also deletes the sonorants. It seems that by revising (HSASD) into the rule of general high consonant spirantization and devoicing (GHSD)

$$(\text{GHSD}) \quad \begin{bmatrix} -\text{son} \\ -\text{cnt} \\ +\text{hi} \end{bmatrix} \rightarrow \begin{bmatrix} +\text{cnt} \\ -\text{vce} \end{bmatrix} / (\text{cvcv}) - \begin{Bmatrix} [-\text{syl}] \\ \# \end{Bmatrix}$$

and ordering it after (Son Del)(4.3.1) spirantization and devoicing of /ǰ/ and [g] can be accounted for in both polysyllabic and monosyllabic words, as shown in the following derivations:

	/oruǰ/	/agaǰ/	/mærǰ/	/dinǰ/	/güng/	/agaǰ+da/	/güng+da/
(RVS)(3.2.11)			ǵ	ǵ		ǵ	ǵ
(Son-Del)(4.3.1)		∅	∅	∅			∅
(GHSD)(4.4.3)	š	š	š	š	x́	š	x́
(HVSS)(3.6.4.1)		g			g		
(TCFR)(3.2.12)				ǰ̸		ǰ̸	
(SVH)(4.1.1)							æ

[oruš][agaš][mæš][diš] [ǵüx́] [agašda] [ǵüx́dæ]

4.4.4. Nevertheless, since after the application of (Son Del) (4.3.1) the monosyllabic words like güng 'pipe' and dinǰ 'calm' will have an intermediate stage like *[ǵüg] and *[diǰ] (in the derivations: [ǵüx́]/[ǵüx́]<ǵüg</güng/ 'pipe' and [diš]< diǰ</dinǰ/ 'calm'), it will be a valid question to ask why the intermediate stages [ǵüg] and [diǰ],

etc. do not undergo the rule of spirantization (without devoicing) and
become *[ǵ̑üj]/[ǵüj] and *[diž] just as spirantization without devoicing
occurs in [ǵöj]/[ǵöj] </gŏg/ 'sky', [už] </uǰ/ 'point', etc.? While it
does not seem improbable that this really is the case in some dialects
of Azerbaijani, i.e., that [ǵ̑üj]/[ǵüj] and [diž] occur, for the Tabriz
[ǵ̑üx] </güng/ 'pipe' and [diš] </dinǰ/ 'calm', we suggest to account for
the spirantization and devoicing of the post sonorant /ǰ/ [ǵ] to [š x̌]
by the following transformational rule which both deletes the sonorant
segment preceding /ǰ/ [ǵ] and spirantizes and devoices the /ǰ/ [ǵ]:

$$\text{(D \& Son Del)} \quad \text{[+syl]} \quad \text{[+son]} \quad \begin{bmatrix} -son \\ +hi \\ -bk \end{bmatrix} \left\{ \begin{matrix} [-syl] \\ \# \end{matrix} \right\} \Rightarrow \quad \emptyset \quad \begin{bmatrix} +cnt \\ -vce \end{bmatrix}$$

$$\qquad\qquad\qquad\quad 1 \qquad\quad 2 \qquad\quad 3 \qquad\quad 4 \qquad\qquad 1 \quad\;\; 2 \quad\;\; 3 \quad\;\; 4$$

This rule accounts for the simultaneous spirantization and de-
voicing of the post-sonorant /ǰ/ [ǵ]'s independently of the rules of
spirantization (4.4.1) and devoicing (4.4.2).

4.4.5. It seems, however, that the above rule can be made more
general so that it may account for the derivations like [k̂æt] </kænd/
'village', [gæt] </gænd/ < Arabic qand 'sugar'.(Note that in [gæt]
n-deletion apart, nativization has stopped with prelexical change of the
/q/ to /g/ and /ā/ to /æ/.) Consequently, we revise the above rule to
the following rule of simultaneous sonorant deletion and spirantization
and devoicing (D & Son Del):

$$\text{(D \& Son Del)} \quad \text{[+syl]} \quad \text{[+son]} \quad \begin{bmatrix} -son \\ \propto hi \\ -bk \end{bmatrix} \left\{ \begin{matrix} [-syl] \\ \# \end{matrix} \right\} \Rightarrow \quad \emptyset \quad \begin{bmatrix} \propto cnt \\ -vce \end{bmatrix}$$

$$\qquad\qquad\qquad\quad 1 \qquad\quad 2 \qquad\quad 3 \qquad\quad 4 \qquad\qquad 1 \quad\;\; 2 \quad\;\; 3 \quad\;\; 4$$

4.4.6. Devoicing in Tabriz speech is not restricted to the out-
put of the already mentioned two rules of devoicing. The final stop in
words like [ot] 'fire' and [süt] 'milk', too, reflects an unpredictable

devoicing. Devoicing in such cases is unpredictable because on the basis
of their pronunciation in some Azerbaijani dialects, like the literary
dialect, as well as in earlier records, these words underlyingly end in
voiced stops. At a closer examination, however, such instances of de-
voicing seem to reflect archaism.

Similarly, we seem to encounter archaism in some words with initial
[p], e.g., [pišmiš] bišmiš 'cooked food', which is pišig in Kashghari
(I, 379-2). Such instances of devoicing along with loanwords with de-
voiced initial stops (e.g., [tükân] < Persian dokan 'shop' are noticeable
because in the majority of the cases the earlier voiceless initial stops
occur voiced in contemporary Azerbaijani.

4.5. Progressive assimilation: we find the following rules of
progressive assimilation in the Tabriz dialect of Azerbaijani.

4.5.1. Denasalization: This rule is responsible for the denasali-
zation of the [m] in suffixes such as the (unstressable) suffix -ma of
negation (e.g., [gapba] < /gap+ma/ 'Do not snatch/bite!') or the
(stressable) suffix -ma used to nominalize verbs (e.g., [gapba] < /gap+ma/
'snatching/biting'). The difference in the place of the primary stress
arises from the fact that the negation suffix -ma is unstressable whereas
the verbal noun suffix -ma is stressable (see 4.2). The rule of denasali-
zation (De Nas) is:

$$\text{(De Nas)} \begin{bmatrix} +ant \\ -cor \end{bmatrix} \rightarrow [-nas] / \begin{bmatrix} +ant \\ -cor \\ -cnt \end{bmatrix} \underline{\quad}$$

In this rule, the feature [-cnt] is needed to block the application
of (De Nas) to words like [sowmax] < /sav+mag/ sovmag 'to finish, to pass
by.'

4.5.2. Delateralization to nasal: By this rule the [l] in the

l-initial suffixes assimilates to the final alveolar nasal of the preceding stem. The rule of delateralization to nasal (Del to Nas) is:

$$\text{(Del to Nas)} \quad [+\text{lat}] \rightarrow \begin{bmatrix} -\text{lat} \\ -\text{cnt} \\ +\text{nas} \end{bmatrix} \Big/ \begin{bmatrix} +\text{ant} \\ +\text{cor} \\ +\text{nas} \end{bmatrix} \underline{\quad}$$

This rule, apparently, applies only to the morpheme-initial /l/ in suffixes. In the following derivations this rule has changed the initial [l] of the verb forming suffix -la and the adjective forming suffix -li. The word ban 'crow (of the rooster)' and the word jan 'soul' are nouns.

	'Crow!'	'living, alive'
	/ban+la/	/ján+li/
(TCFR)(3.2.12)		ʒ
(Del to Nas)(4.5.2)	n	n
(SVH)(4.1.1)		ɨ
(HU)(3.11.2.2)		i
	[banna]	[ʒanni]

Like all the rules in this chapter, (Del to Nas), too, belongs to the normal and informal styles of speech. The rule does not apply to formal style, hence we hear the alternants [banla] and [ʒanli] in this style.

4.5.3. Delateralization to stops: This rule accounts for the assimilation of the morpheme-initial /l/ of suffixes to the stem-final nonhigh stops (i.e., /t/, /d/). The rule of delateralization to stops (Del to Stop) is:

$$\text{(Del to Stp)} \quad [+\text{lat}] \rightarrow \begin{bmatrix} -\text{son} \\ -\text{lat} \\ -\text{cnt} \end{bmatrix} \Big/ \begin{bmatrix} +\text{ant} \\ +\text{cor} \\ -\text{cnt} \end{bmatrix} \underline{\quad}$$

The rule (Del to Stp) accounts for derivations like the following where the /l/ of the plural suffix -lar, the transitive and intransitive

verb derivation suffixes like -la and -lan respectively, the reciprocity

verb suffix -laš, the adjective suffix -li, etc., changes to the preceding

nonhigh stop:

	'horses'	'Fold (it)'	'Be mounted!'	'Talk about troubles with someone'	'villager'
	/at+lar/	/gat+la/	/at+lan/	/dærd+laš/	/kænd+li/
(RVS)(3.2.11)					k
(TCFR)(3.2.12)					ĝ
(Devoicing)(4.4.2)				t	
(SVH)(4.1.1)				æ	
(D&SonDel)(4.4.5)					øt
(Del to Stp)(4.5.3)	d	d	d	d	d
	[atdar]	[gatda]	[atdan]	[dærtdæš]	[ĝætdi]

The Tabriz pronunciation for 'Fold (it)!' is not [gatda], but

[gætdæ]. There are other words, too, which reflect a breach of syn-

harmony in Tabriz speech, as in [gæræ]</gara/ gara 'black', etc.

The two rules of delateralization can be collapsed into:

$$[+lat] \rightarrow \begin{bmatrix} +ant \\ -lat \\ -cnt \\ \alpha\ nas \end{bmatrix} / \begin{bmatrix} +ant \\ +cor \\ -cnt \\ \alpha\ nas \end{bmatrix} \underline{\quad}$$

This rule can account for the pronunciation of the examples cited

for both the rules of delateralization-to nasal, and delateralization-to

stops.

4.5.4. Delateralization to r: This rule changes the /l/ in the

suffixes cited in (4.5.3) to the final r of the stem, as in [garri]<

/gar+li/ 'snowy', [ĝindɨrri]</jindɨr+li/ 'shabby', etc.. The rule of

delateralization to r (Del-to r) is:

$$(\text{Del-to r}) \begin{bmatrix} +son \\ +cor \\ -nas \end{bmatrix} \rightarrow [-lat] / \begin{bmatrix} +son \\ +cor \\ -nas \\ -lat \end{bmatrix} \underline{\quad}$$

But a form like [gǽlillær] / [ǵǽlillær]</gælir+lar/ 'they are
coming' with a regressive assimilation contradicts this rule which predicts
a progressive assimilation as in [gælirrǽr] / [ǵǽlirrær]</gælir+lar/
'incomes.' The problem is pointed out by Akhundov (1973:298) who rightly
sees a connection between the kind of the assimilation with the grammatical
status of the stems in the words for 'incomes' and 'they are coming' (the
stem in the former is a noun, in the latter a finite verb). We may add
that beyond the grammatical difference and connected with it, there is a
difference in the position of the primary stress in the two words. (I.e.,
in [ǵǽlirrǽr] 'incomes' the primary stress is on the suffix vowel,
whereas in [ǵǽlillær] 'they are coming' the primary stress is on the
last stem syllable) In other words, the connection between the kind of the
assimilation and the grammatical status of the word is determined by the
stress pattern of the word.

Specifically, when we compare [ǵǽlirrǽr] 'incomes' with [ǵǽlillær]
'they are coming', it appears that the assimilation in both words results
from the association of the segment undergoing assimilation with the
primarily stressed vowel. In [ǵǽlirrǽr]</gæl+ir+lár/ 'incomes' it
is the vowel of the plural suffix which is primarily stressed whereas in
[ǵǽlillær]</gæl+ír # lar/ 'they are coming' it is the vowel of the
suffix -ir which bears the primary stress.

The difference in the position of the primary stress is in turn
grammatically motivated. The word [ǵǽlirrǽr] 'incomes' is a noun with
no internal word boundary or unstressable suffix, hence it is stressed
on the last syllable by the Azerbaijani MSR. But [ǵǽlillær] 'they are
coming', is a sentence containing an internal word boundary between the
predicate [ǵǽlir] and the third person plural subject [lær]. Unlike

the case in [ǰælirrǽr] 'incomes' which for not having any internal un-
stressable unit is subject to <u>one</u> application of the MSR, [ǰælíllær]
'they are coming' for containing an internal unstressable unit, i.e.,
the word boundary, between the predicate [ǰælir] and the subject [lær],
is subject to another application of the MSR which places the primary
stress on the syllable preceding the unstressable unit of the word
boundary and reduces the primary stress on the last syllable to the
secondary stress.

The above discussed connection between the kind of assimilation
(i.e., whether it will be progressive as in [ǰælirrǽr] 'incomes' or
regressive as in [ǰælíllær] 'they are coming') and the stress pattern
arising from the grammatical reasons (i.e., the fact that [ǰælirrǽr]
'incomes' is a noun whereas [ǰælíllær] 'they are coming' is a sentence)
may be seen more clearly in the following derivations showing the stress
assignment and the delateralization assimilation in the words for 'incomes'
and 'they are coming.'

	##ǰæl+ir+lær##	##ǰæl+ir#lær##
MSR (1)	1	1
(2)		1 2
(Del.to r)	r	1
	[ǰælirrǽr]	[ǰælíllær]
	'incomes' (noun)	'they are coming' (sentence)

4.5.5. Strident assimilation: a /t/ changes to [s] after another
[s] followed by a high vowel followed by a boundary, as in [issi]</isti/
'warm', [tüssi]</tüstü/ 'smoke', etc.. The rule of strident assimilation
(Strid Ass) is:

$$
\text{(Strid Ass)} \quad
\begin{bmatrix} +ant \\ +cor \\ -vce \end{bmatrix}
\rightarrow
\begin{bmatrix} +cnt \\ +strid \end{bmatrix}
/
\begin{bmatrix} +ant \\ +cor \\ -vce \\ +cnt \\ +strid \end{bmatrix}
\quad - \quad
\begin{bmatrix} +syl \\ +hi \end{bmatrix}
\begin{Bmatrix} \# \\ + \end{Bmatrix}
$$

The restrictions of the high vowel and the boundaries in the environment are necessary to block the application of the rule in words like [isdæ]</istæ/ 'Ask for', [jasdɨx]</jastɨg/ 'pillow', [jasdɨxlar]< /jastɨg+lar/ 'pillows', etc..

The rule of strident assimilation can be seen in the following derivations where only the first two forms illustrate the (Strid Ass):

	'warm'	'flat'	'pillow'	'love'	'beloved'
	/isti/	/jastɨ/	/jastɨg/	/istæk/	/istæk+li/
	[-Vce-Diss]	[-Vce-Diss]			
(RVS)(3.2.11)				ḱ	ḱ
(Spir)(4.4.1)				x́	x́
(Devoicing)(4.4.2)			x		
(Vce-Diss)(4.6.1)			d	d	d
(HUF)(3.11.2.1.3)		i			
(Strid Ass)(4.5.5)	s	s			
	[issi]	[jassi]	[jasdɨx]	[isdæx́]	[isdæx́li]

However, as the derivations show, if we order voicing dissimilation before (Strid Ass), the environment of this rule can be simplified. I.e., with the condition that it will be ordered after the rule of voicing dissimilation, the (Strid Ass) can be revised into:

$$
\begin{bmatrix} +ant \\ +cor \\ -vce \end{bmatrix}
\rightarrow
\begin{bmatrix} +cnt \\ +strid \end{bmatrix}
/
\begin{bmatrix} +ant \\ +cor \\ -vce \\ +cnt \\ +strid \end{bmatrix}
\quad - \quad
[+syl]
$$

In the speech of some speakers the words for 'warm' and 'flat' are respectively [isdi] and [jasdi]. This means that in the speech of those

who say [isdi] and [jasdi] the rule (Vce-Diss) rather than the rule

(Strid Ass) operates.

4.5.6. Regressive assimilation: The Tabriz dialect of Azerbaijani

has the following rules of regressive assimilation:

4.5.6.1. Nasal assimilation: This is a point of articulation

assimilation rule by which the Azerbaijani alveolar nasal /n/ changes to

the labial nasal [m] or the velar nasal [ŋ] when it is followed by the

labial consonants /b m/ or the velar stop /k g/. The rule of nasal

assimilation (Nas Ass) is:

$$\text{(Nas Ass)} \quad [+nas] \rightarrow \begin{bmatrix} -cor \\ \alpha ant \\ \beta hi \\ \gamma bk \end{bmatrix} \Big/ - \begin{bmatrix} -cnt \\ -strid \\ -cor \\ \alpha ant \\ \beta hi \\ \gamma bk \end{bmatrix}$$

Note that when followed by fricatives, after, apparently, nasalizing

the preceding vowel /n/ may be sometimes deleted, by the following rule

of vowel nasalization (V-Nas)[5]:

$$\text{(V-Nas)} \quad [+syl] \quad \begin{bmatrix} +nas \\ +cor \end{bmatrix} \begin{bmatrix} +cns \\ +cnt \\ -bk \end{bmatrix} \Rightarrow [+nas] \quad \emptyset \qquad \text{(optional)}$$

$$\qquad\qquad 1 \qquad 2 \qquad 3 \qquad\qquad 1 \qquad 2 \qquad 3$$

Examples of the application of the (Nas Ass) and (V-Nas) can be

seen below (the words for 'ear of grain' and the proper name Ánvar come

from the Arabic sunbul and anwar; the words for 'tank' comes from the

Russian tank; and the word for 'conference' comes from the French

conférence. The word for 'narrow' consists of [æn] 'width' and [siz]

'lack of'; the word for 'unbreakable' consists of [sɨm] 'break' and [maz]

(negation suffix).):

	'ear of grain'	'unbreakable'	'bonfire'	'tank'
	/sünbül/	/sɨn+maz/	/tongal/	/tang/
(Nas Ass)(4.5.6.1)	m	m	ŋ	ŋ
(V-Nas)(4.5.6.1)				
	[sùmbül]	[sɨmmaz]	[toŋgal]	[taŋg]

	'conference'	'Anvar'(name)	'narrow'	'grin'
	/konfrans/ [-RVS]	/ænvær/	/æn+siz/	/gɨnša/
(Nas Ass)(4.5.6.1)	ɱ	ɱ	n	n
(V-Nas)(4.5.6.1)	õ̃ø	æ̃ø	æ̃ø	ɨ̃ø
	[kõfrans]	[æ̃vær]	[æ̃siz]	[gɨ̃ša]

4.5.6.2. Assimilation to /s/: This rule which changes /t d z l/
to [s] before another /s/, can be written thus:

$$(\text{Ass to s}) \begin{bmatrix} +ant \\ +cor \\ \alpha son \\ \alpha lat \end{bmatrix} \rightarrow \begin{bmatrix} -vce \\ +cnt \\ +strid \end{bmatrix} \Big/ \underline{\quad} \begin{bmatrix} +ant \\ +cor \\ +cnt \\ -vce \\ +strid \end{bmatrix}$$

The following derivations reflect the application of the (Ass to s)
(The suffix /siz/ means 'without'; /sin/ is the second person singular
imperative mood suffix; /sa/ is the third person singular condition
suffix.):

	'without a horse'	'if lost'	'tasteless'	'saltless'	'all right'
	/at+siz/	/it+sa/	/dad+siz/	/duz+siz/	/ol+sin/
(Ass to s)	s	s	s	s	s
(SVH)	ɨ	æ	ɨ	u	u
	[assɨz]	[issæ]	[dassɨz]	[dussuz]	[ossun]

4.5.6.3. Lateral assimilation: By this rule the /r/ in the
syllable with a stressed vowel becomes [l] before the /l/ of the plural

morpheme /lar/, as in [gǽælillær]/[gǽælillær] < /gæl+ir+lar/ 'they are
coming', [jazɨllar] < /jaz+ir+lar/ 'they are writing', etc..

   For the reason discussed under the rule of (Del to r) we suggest
the following transformational rule for lateral assimilation (LA):

$$(LA) \quad \begin{bmatrix} +syl \\ +stress \end{bmatrix} \begin{bmatrix} +son \\ -nas \\ -lat \end{bmatrix} + \begin{bmatrix} +son \\ +lat \end{bmatrix} \Rightarrow [+lat]$$

$$\quad\quad\quad 1 \quad\quad\quad 2 \quad\quad\quad 3 \quad\quad\quad 1 \;\; 2 \quad\; 3$$

   Considering that the direction of assimilation in both (Del to r)
and (LA) is determined by the same factor, i.e., the presence of a stressed
vowel in the syllable whose liquid assimilates to the liquid across
morpheme boundary, it becomes plausible to collapse these rules. But
since the segment sequence is not identical in the environment of these
rules, collapsing of the two rules does not seem possible, at least with
the present notational conventions of generative phonology. Intuitively
it would seem that the generative model should be revised to allow for
the formalization of this single process.

   4.6. Dissimilation: There are two kinds of dissimilation in the
Tabriz dialect of Azerbaijani: voicing dissimilation and strident
dissimilation.

   4.6.1. Voicing dissimilation: In Tabriz speech contiguous medial
obstruents differ in voice, the first being voiceless, the second voiced.
The reason could be that whereas the first obstruent is followed by
another obstruent, the second obstruent is followed by a vowel. Hence,
whether both are underlyingly voiceless (e.g., /axtar/ 'search') or
voiced (e.g., /dogguz/ 'nine') the medial contiguous obstruents dis-
similate in voice by the following rule of voicing dissimilation
(Vce-Diss):

$$(\text{Vce-Diss}) \quad [+syl] \begin{bmatrix} +cns \\ -son \end{bmatrix} \begin{bmatrix} +cns \\ -son \\ -cnt \\ -strid \end{bmatrix} \quad [+syl] \quad \Rightarrow \quad [-vce] \quad [+vce]$$

	1	2	3	4		1	2	3	4

This rule accounts for the following derivations:

	'druggist'	'notebook'	'search'	'eight'	'nine'
	/ættar/	/dæftær/	/axtar/	/sækkiz/	/dogguz/
(RVS)(3.2.11)				kk	
(TCFR)(3.2.12)				ǩǩ	
(Vce-Diss)(4.6.1)	d	d	d	ǧ	k
	[ætdar]	[dæfdær]	[axdar]	[sægǧiz]	[dokguz]

The words for 'druggist' and 'notebook' come from the Arabic ʕaṭṭar and Persian daftar.

4.6.2. Strident dissimilation: /s z š/ become [t d] before /č ǰ/ by the following rule of strident dissimilation (Strid Diss):

$$(\text{Strid Diss}) \begin{bmatrix} -son \\ +cor \\ \alpha ant \\ -hi \end{bmatrix} \rightarrow \begin{bmatrix} -cnt \\ -strid \\ +ant \\ -hi \end{bmatrix} \Bigg/ \underline{\quad} \begin{bmatrix} +hi \\ -cnt \\ +strid \end{bmatrix} \quad (\text{informal})$$

This rule is responsible for the following derivations in Tabriz speech (the /či/ is the profession suffix; /ǰa/ is (a) quantity marker, (b) adjective suffix):

	'worker'	'a little'	'In Russian'
	/iš+či/	/az+ǰa/	/rus+ǰa/
(TCFR)(3.2.12)	c	ǯ	ǯ
(Strid Diss)(4.6.2)	t	d	t
	[itci]	[adǯa]	[rutǯa]

These more informal than normal pronunciations alternate with the normal and formal [išci], [azǯa], [rusǯa]. We find these words

pronounced [iǰji], [aǰja], [ruǰja] in several Azerbaijani dialects in-cluding the Baku dialect (Shiräliyev, 1967:116).

4.7. Other rules: The following are a variety of rules which operate in the derivation of the Tabriz pronunciation. While not exhaustive, they seem to constitute the basic rules of Azerbaijani phonology.

4.7.1. Mid vowel change: since in many Azerbaijani dialects including the Tabriz dialect, mid vowels (except the ones phonetically derived (see 2.3.5.2-5)) do not occur in noninitial syllables of morphemes, the unexpected mid vowels are changed by the following rule of mid vowel change (MVC):

$$(\text{MVC}) \begin{bmatrix} +\text{syl} \\ -\text{hi} \\ -\text{lo} \\ \alpha\text{bk} \end{bmatrix} \rightarrow \begin{bmatrix} \alpha\text{hi} \\ -\alpha\text{lo} \end{bmatrix} \Big/ \# \ \text{cvc} -$$

According to this rule the mid vowels /e o/ change to [æ u]. In the following derivations the rule of mid vowel change is reflected. The words for 'tulip' and 'slave' come from the Persian lāle and bande, and the word for 'lemonade' comes from the Russian limonad:

	'tulip'	'slave'	'lemonade'
	/lāle/	/bæⁿde/	/limonad/
(MVC)(4.7.1)	æ	æ	u
(Devoicing)(4.4.2)			t
	[lālæ]	[bæⁿdæ]	[limunat]

Note that although [lālæ] and [limunat] in normal Tabriz speech are not fully nativized, in informal style, by undergoing more rules, these words have thoroughly nativized pronunciations, as shown in the following derivations. These examples, too, support our view expressed

in (1.17) and Chapter 5 concerning the relationship between the degree of nativization and the number of the rules involved in derivations.

	'tulip'	'lemonade'
	/lāle/	/limonad/
(MVC)(4.7.1)	æ	u
(Devoicing)(4.4.2)		t
(NFVS)(3.11.3.3)	a	
(NRVH)(4.1.2)	a	u
	[lala]	[lumunat]

4.7.2. Vowel deletion: The final vowel of a morpheme is deleted by the following rule of vowel deletion (V-Del):

(V-Del)   [+syl] → ∅ / - # [+syl]

The rule of vowel deletion is reflected in the following derivations:

	'dry wood'	'yellow apple'
	/guru # odun/	/sarɨ # alma/
(V-Del)	∅	∅
	[gurodun]	[saralma]

4.7.3. There is a tendency, in Azerbaijani, to delete the un-stressed word-medial vowel by the following rule of syncope (Sync):

(Sync) $\begin{bmatrix} +syl \\ -stress \end{bmatrix}$ → ∅ / [+syl][-syl] − [-syl][+syl]

The rule of syncope is exemplified in the following derivations (in these derivations /da/ is the location marker; /im/ is the first person singular genitive marker; and /i/ is the third person genitive marker):

	'where?'	'there'	'my neck'	'his mouth'
	/hara+da/	/ora+da/	/bojun+im/	/agɨz+i/
(HVSS)(3.6.4.1)				g
(Sync)(4.7.3)	∅	∅	∅	∅
(SVH)(4.1.1)			u	ɨ
(HU)(3.11.2.2)				i
	[harda]	[orda]	[bojnum]	[agzi]

The rule of syncope is also involved in nativization, as we find
in the following derivations. The pronunciations [hælmæ], [xædʒæ],
[fatma], [sælgæ], [ærzæ] come from the Arabic proper names Halīma,
Khadīja, Fāṭima, and the nouns salīga and ʕarīza.

	/hælīmæ/	/xædīja/	/fātimæ/	/sælīgæ/	/ærīzæ/
(NFVS)(3.11.3.3)		a			
(Sync)(4.3.7)	∅	∅	∅	∅	∅
(TCFR)(3.2.12)		ʒ			
	[hælmæ]	[xædʒæ]	[fatmæ]	[sælga]	[ærzæ]

The proper names [xædʒæ] and [fatmæ], in informal style have
the thoroughly nativized forms [xætʒæ] and [fatma]. The following
derivations of these forms, too, show the relationship between the degree
of nativization and the number of the rules involved in the derivations.

	(proper name)	(proper name)
	/xædījæ/	/fātimæ/
(NFVS)(3.11.3.3)		a
(Sync)(4.7.3)	∅	∅
(TCFR)(3.2.12)	ʒ	
(NRVH)(4.1.2)		a
(Vce-Diss)(4.6.1)	t	
	[xætʒæ]	[fatma]

Since the effect of (Sync) is the creation of medial clusters one cannot help noticing a similar effect as in the output of (i-addition) e.g., in [isport]</sport/ 'sport', [isdiɡ̌an]</stakan/ 'tumbler', etc.

4.7.4. Glottal weakening: In Azerbaijani, the glottal segments /ʔ h/ tend to weaken on a scale from the stop to the fricative and from the fricative to the zero, by the following rule. The context free rule of glottal weakening (Glt Wk) is (except for [fæhlæ] Arabic faṣla 'laboror' which is used in all three styles of pronunciation, the output of (Glt Wk) represents the informal pronunciation. For a scale of consonant strength see Hooper, 1973, esp. p. 125):

(Glk Wk) $\begin{bmatrix} +cns \\ +lo \end{bmatrix}$ → [-1 degree of constriction]

Condition: (A) in /-c this rule applies only once.

(B) This rule applies to the preconsonantal /h/ optionally to give informal pronunciation.

The argument for the context free status of this rule is based on the following derivations. All the words are Arabic loans. Mashad is the capital of Khorāsān (the northeastern province of Persia).

/mæshaɹd//tælʔæt//sāɹæt//šæmʔ//sæhæhær//fæʔlæ/

(NFVS)(3.11.3.3)			a				
(Glt Wk)(1)	∅	h	h		h	∅	h
(2)		∅	∅		∅		
(Devoicing)(4.4.2)	t						
(NRVH)(4.1.2)			a				

[mæšæt][tælæt] [saat] [šæm] [sæær][fæhlæ]

As these derivations indicate, (Glt Wk) can weaken the glottal stop to the glottal fricative, and the glottal fricative to zero in all

positions except before a consonant. In this position, a second applica-
tion of the (Glt Wk) will result in pronunciations like*[fæ laʔ] which
does not seem to be a word in Azerbaijani. In addition to [fæ hlaʔ] which
belongs to all three styles of speech, there are informal pronunciations
with a weakened glottal stop as the following derivations show (The loans
are from the Arabic ʔiʕtimād 'trust', ʔiʕtinā 'concern', ʔiʕtiqād 'opinion',
muʕtadil 'temperate'.):

	'trust'	'concern'	'opinion'	'temperate'
	/eʔtimād/	/eʔtinā/	/eʔtigād/	/möʔtædil/
(Glt Wk)(4.7.4)	h	h	h	h
(FVS)(3.11.3.4)	a	a	a	
(Vce-Diss)(4.6.1)	d	d	d	d
(Devoicing)(4.4.2)	t		t	
	[ehdimat]	[ehdina]	[ehdigat]	[möhdædil]

4.7.5. Glide insertion in nativization: Following the rule of
(Glt Wk)(4.7.4), which creates a vowel sequence in the intermediate
stage, the already discussed rule of (Glide-ins)(3.11.2.2.5) inserts a
glide agreeing in roundness with the first vowel of the sequence.

The following derivations illustrate the role of the rule of glide
insertion in nativization. All the loans come from Arabic:

	'pretence'	'prayer'	'rule'
	/riʔā/	/duʔā/	/gāʔidæ/
(FVS)(4.7.11)	a	a	
(NFVS)(3.11.3.3)			a
(Glt Wk)(4.7.4)(1)	h	h	h
(2)	∅	∅	∅
(Glide-ins)(3.11.2.2.5)	y	w	y
(Sync)(4.7.3)			∅
(NRVH)(4.1.2)			a
	[riya]	[duwa]	[gayda]

	(proper name)	'question'	'representative'
	/sæʔīd/	/suʔāl/	/nāʔib/
(FVS)(4.7.11)	i	a	
(NFVS)(3.11.3.3)			a
(Glt Wk)(4.7.4.)(1)	h	h	h
(2)	∅	∅	∅
(Glide-ins)(3.11.2.2.5)	y	w	y
(Sync)(4.7.3)			
(Devoicing)(4.4.2)	t		p
(NRVH)(4.1.2)			ɨ
	[sæyit]	[suwal]	[nayɨp]

4.7.6. i-epenthesis: This is a nativization rule which inserts
an [i] into the initial and final consonant clusters to prevent their
occurrence at the phonetic level. The rule of i-epenthesis (i-ep) is:

$$\text{(i-ep)} \quad \emptyset \rightarrow \begin{bmatrix} +syl \\ +hi \\ -bk \end{bmatrix} \Big/ \begin{Bmatrix} \# \ c - c \\ c - c \ \# \end{Bmatrix}$$

The rule of i-epenthesis is reflected in the following derivations, where the word for 'thought' is an Arabic loan and the words for 'club', 'motion picture' and 'meter' are apparently from French:

	'thought'	'club'	'motion picture'	'meter'
	/fikr/	/glub/	/film/	/metr/
(RVS)(3.2.11)	ḱ			
(TCFR)(3.2.12)	p̂			
(i-ep)(4.7.6)	i	i	i	i
(Devoicing)(4.4.2)		p		
(NRVH)(4.1.2)		u		
	[fip̂ir]	[gulup]	[filim]	[metir]

In urban Tabirz pronunciation final clusters in some words are tolerated, as in [metr] 'meter', [fip̂r]~[fix́r] 'thought', [film] 'film', etc.. These pronunciations in contrast with the more nativized pronunciations [metir], [fip̂ir], and [filim], prove a point concerning the relationship between the degree of nativization and the number of the rules involved in the derivation. See (1.17) and Chapter 5 for further discussion.

4.7.7. i-addition: Loans with initial clusters beginning with a strident fricative are nativized in Azerbaijani dialects by the addition of an [i] by the following rule of i-addition (i-ad):

$$(i\text{-ad}) \quad \emptyset \rightarrow \begin{bmatrix} +syl \\ +hi \\ -bk \\ -rnd \end{bmatrix} \Big/ \# - \begin{bmatrix} +cnt \\ +strid \end{bmatrix} [-syl]$$

This rule accounts for the nativized loans such as the following. The word for 'wardrobe' comes from the Russian _škaf_:

	'sport'	'wardrobe'
	/sport/	/šgaf/
(i-ad)	i	i
	[isport]	[išgaf]

In many Azerbaijani dialects [i] is added also by the following rule of i-addition before [r] (i-ad [r]):

$$(\text{i-ad } [r]) \qquad \emptyset \rightarrow \begin{bmatrix} +syl \\ +hi \\ -bk \end{bmatrix} / \underline{\quad} \begin{bmatrix} -syl \\ +son \\ -nas \\ -lat \end{bmatrix}$$

This rule is reflected in the following derivations where the loans come from Arabic, and are current in Baku, Mughan, Julfa and other dialects.

	(a herb)	(proper name)	'satisfied'	(proper name)
	/rejhān/	/rizā/	/rāzī/ [-NFVS]	/ræhīm/
(FVS)	a	a	i	i
(i-ad)	i	i	i	i
(Sync)		∅		
	[irejhan]	[irza]	[irāzi]	[iræhim]

The pronunciation [išæmbæ] < /šænbe/< Persian šænbe 'Saturday' in many Azerbaijani dialects including Tabriz speech reflects a similar i-addition process which does not seem to be synchronically productive. However, the pronunciations [iradijol]~[iradijo] 'radio' in the Norashen dialect and [irezin] in the Mughan, Norashen, Nakhchivan dialects seem to indicate that (i-ad [r]) is a productive rule in some dialects of Azerbaijani. (See Shirāliyev, 1967:67-9).

4.7.8. j-rounding: [j] derived from [ǧ] is rounded and converted into a glide after front round vowels if it is in syllable-final or a

word-final position. This rule can be formulated:

$$
\text{(j-rnd)}
\begin{bmatrix}
+\text{cns} \\
+\text{hi} \\
-\text{bk} \\
+\text{cnt} \\
+\text{vce} \\
-\text{strid}
\end{bmatrix}
\rightarrow
\begin{bmatrix}
-\text{cns} \\
+\text{rnd}
\end{bmatrix}
/
\begin{bmatrix}
+\text{syl} \\
-\text{bk} \\
+\text{rnd}
\end{bmatrix}
\quad
\left\{
\begin{array}{c}
\$ \\
\#
\end{array}
\right\}
$$

The rule of j-rounding is reflected in the following derivation:

	'sky, blue'	'pigeon'
	/gög/	/gögæ rčin/
(RVS)(3.2.11)	ǵ ǵ	ǵ ǵ
(Spir)(4.4.1)	j	j
(TCFR)(3.2.12)	ɟ̂	ɟ̂ c
(j-rnd)(4.7.8)	w̃	w̃
	[ɟ̂ow]	[ɟ̂owæ rcin]

4.7.9. **n-epenthesis and voicing by [n]:** in informal style, in a number of loan morphemes ending in the voiceless dental or palatal stop or affricate, between this segment and the preceding vowel an [n] is inserted as a result of which the final voiceless stop or affricate is voiced. This process of [n] insertion and the subsequent segment voicing (n-ep & v), may thus be formulated:

$$
[+\text{syl}]
\begin{bmatrix}
-\text{cnt} \\
-\text{vce} \\
\propto\text{ant} \\
\propto\text{cor} \\
-\propto\text{hi}
\end{bmatrix}
(\#) \; [+\text{syl}] \Rightarrow
\begin{bmatrix}
+\text{nas} \\
+\text{cor}
\end{bmatrix}
[+\text{vce}]
$$

$$
1 \qquad 2 \qquad 3 \quad 4 \qquad 1 \qquad 2 \qquad 3 \qquad 4
$$

The application of this rule is reflected in the following derivations. (The words for 'limestone', 'smart', 'carnation' and 'screw' come from the Persian āhæk, zīræk, mīxæk, and pīč; the word for comfortable comes from the Arabic rāḥat; the word for 'stove' comes from the Russian peč.):

	'Buy limestone!'	'Be smart!'	'I am comfortable'	'smell of carnation'	'to the stove'
	/āhaɛk#al/	/zĭɾæk#ol//rāhaɛt+am/		/mɨxæk#ig+i//picta/	
(RVS)(3.2.11)	k̓	k̓		k̓ g̓	
(n-ep & v)(4.7.9)	ng̈	ng̈	nd	ng̈	nǰ
(HVSS)(3.6.4.1)				j	
(TCFR)(3.2.12)	ɸ̓	ɸ̓		ɸ̓	ǰ
(NFVS)(3.11.3.3)	a	i	a		
(NRVH)(4.1.2)	a		a		æ

[ahanɸ̓al] [ziɾæ nɸ̓ol] [rahandam] [mɨxæ nɸ̓iji] [pinǰæ]

4.7.10. **j-deletion:** in informal and normal styles, in a number of

loanwords the segment /j/ is deleted by the following rule:

$$(\text{j-Del}) \begin{bmatrix} +cns \\ +hi \\ -bk \\ +cnt \\ +vce \\ -strid \end{bmatrix} \rightarrow \emptyset \quad / \underline{\quad} [-syl] \left\{ \begin{matrix} [-syl] \\ \# \end{matrix} \right\}$$

This rule accounts for the deletion of the /j/ in the following

derivations (all the examples were borrowed from Arabic):

	'religious leader'	(proper name)	'flood'
	/šejx/	/hüsejn/	/sejl/
(j-Del)	∅	∅	∅
	[šex]	[hüsen]	[sel]

As it can be seen, this is a rule of cluster simplification with

a function similar to that of (Son Del). But final clusters consisting

of a /j/ and a consonant are also simplified by (i-ep), e.g., [hejif]<

/hejf/ 'what a pity' < Arabic <u>hayf</u>; [mejil]</mejl/ 'tendency' < Arabic

<u>mayl</u>, etc..

However, considering that the segment deleted by both (Son Del)

and (j-Del) is a voiced nonstrident nonback consonant, we may collapse

the two rules into the rule of the voiced consonant deletion (VcnsDel).

$$\text{(VcnsDel)} \quad \begin{bmatrix} +cns \\ +vce \\ -strid \\ -bk \end{bmatrix} \rightarrow \emptyset \quad / \quad - \quad \left\{ \begin{matrix} \begin{bmatrix} +cns \\ -bk \\ -lo \end{bmatrix} \\ \begin{bmatrix} +bk \\ +cnt \\ -vce \end{bmatrix} \end{matrix} \right\} \left[\left\{ \begin{matrix} [-syl] \\ \# \end{matrix} \right\} \right]$$

This rule can account for the deletion of both the preconsonantal sonorants and the /j/.

4.7.11. Final /s/ voicing: In Tabriz speech, there seems to be a rule by which the final /s/ of some polysyllabic loanwords is voiced. (See also the last paragraph of note 19, Chapter 2.) The rule of final /s/ voicing can be formulated as:

$$\text{(FSV)} \quad \begin{bmatrix} +ant \\ +cor \\ +cnt \\ +strid \end{bmatrix} \rightarrow [+vce] \; / \; vcv \; - \; \#$$

As the rule shows, it applies only to polysyllabic words. This is deducible from the fact that monosyllabic loans like [fars]~[fas]< /fars/< Persian _fars_ 'Persian', [tas]</tas/< Arabic _tās_ 'basin', [šans] </šans/< French _chance_ 'luck', [dærs]~[dæs]</dærs/< Arabic _dars_ 'lesson', [æxs] 'photograph'</æks/< Arabic ʕaks 'reflex', etc. do not undergo this rule. Interestingly, the word for 'photograph' has the bisyllabic alternant [æβiz] with voiced final /s/ in Rizaiyya speech.

The following derivations reflect the (FSV) (the words for _Aras_, 'rooster' and 'rug' are apparently Persian loans, and the words for 'silk satin', 'photograph' and 'diamond' are Arabic loans):

	'The Aras River'	'rooster'	'silk satin'
	/aras/	/xorus/	/æt læs/
(FVS)(4.7.11)	z	z	z
	[araz]	[xoruz]	[æt læz]

	'rug'	'photo'	'diamond'
	/pæ lās/	/æks/	/æ lmās/
(RVS)(3.2.11)		ḱ	
(TCFR)(3.2.12)		β̂	
(i-ep)(4.7.6)		i	
(FVS)(3.11.3.4)	a		a
(NRVH)(4.1.2)	a		a
(FSV)(4.7.11)	z	z	z
	[palaz]	[æβ̂iz]	[almaz]
		(Rizaiyya)	(literary)

The (FSV), however, is not an exceptionless rule, as it can be gathered from the pronunciations [inǵilis] England, [tiflis] (capital of Soviet Georgia), [æ lmas] < /æ lmās/ < Arabic almās 'diamond', etc..

4.7.12. Voicing of the /f/: Azerbaijani seems to have a rule of nativization by which an /f/ followed by a voiceless fricative is voiced. The rule of (/f/ voicing) is:

$$
(/f/\text{-voicing}) \begin{bmatrix} +ant \\ -cor \\ +cnt \\ +strid \end{bmatrix} \rightarrow [+vce] \Big/ \underline{\quad} \begin{bmatrix} -son \\ +cor \\ +cnt \\ -vce \end{bmatrix}
$$

This rule is reflected in the following derivations of the nativized forms of the Persian words for 'charm' and 'violet':

	'charm'	'violet'
	/æfsūn/	/bænæfše/
(MVC)(4.7.1)		æ
(FVS)(3.11.3.4)	u	
(/f/ voicing)(4.7.12)	v	v
(Diph)(2.6.5.2)	öw	öw
(NRVH)(4.1.2)	ow	
	[owsun]	[bænöwšæ]

This rule of nativization does not apply to some words like [æfsær] </æfsær/< Persian afsär 'army officer', [æfsānæ] </æfsāne/< Persian afsāne 'myth', [næfs] </næfs/< Arabic nafs 'self', etc..

4.7.13. Suppletion: A number of function morphemes such as the bound morphemes /ila/ 'with', /kimi/ 'like', /ǰa/ 'as much as', in normal and informal styles, have underlying representations like /inan/, /kimin/, /ǰan/ by suppletion.

4.8. Order: The answer to the question whether the phonological rules in this study are sequentially or simultaneously ordered[6] may have become clear by now. Rules apply to the underlying forms when they provide the required structural description. If the underlying representation provides the necessary structural description for more than one rule, they apply simultaneously. When, however, a rule can apply only to the output of another rule the application of these rules will be sequential. E.g., in the derivation of [ʃǽ rowüz], the underlying representation /kæ ræfs/ 'celery'< Persian kärafs, has the required structural description for the simultaneous application of the rules

of the realization of the velar stops (RVS)(3.2.11) and (/f/-voicing)(4.
7.2), but the rule of diphthongization (Diph)(2.6.5.2), that in the case
of [ǽæ röwüz] derives the diphthong [öw] from the segment sequence [æv],
must follow the (/f/-voicing). Similarly, whereas the Tabriz context
free rule (TCFR)(3.2.12) that applies to the output of (RVS)(3.2.11),
i-epenthesis (i-ep)(4.7.6), and final /s/ voicing (FSV)(4.7.11) can
apply simultaneously, the rounding of the epenthetic [i] by the nativiza-
tion rule of root vowel harmony (NRVH)(4.1.2) must follow (i-ep)(4.7.11),
thus:

```
    /k          æ      r      æ         f                    s/

    (RVS)                             (/f/-voicing)

     ḱ
                                        v
    (TCFR)                      (Diph)        (i-ep)   (FSV)

     ƀ̂                           ö        ẅ      i        z

                                              (NRVH)

                                                ü
```

Another example: [ör̂ǽænȝæx̂]</ograénȷ́æk/ 'experiment'

```
    /ö      g      r      æ      n      ȷ̌      æ      k/

        (RVS)(metathesis)              (TCFR)        (RVS)

         ǵ                              ȝ̌            ḱ

         r      ǵ                                   (HVSS)

            (TCFR)                                   x́

             ƀ̂
```

Finally, [ǰowærcin]</gögærčin/ 'pigeon':

/g	ö	g	æ	r	č	i	n/
(RVS)		(RVS)			(TCFR)		
ǵ		ǵ			c		
(TCFR)		(HVSS)					
ǰ		j					
		(j-rnd)					
		ẅ					

It must be added, however, that some rules need to be extrinsically ordered. E.g., in the derivation of the word for 'factory' the rules (RVS)(3.2.11), (P-Ass)(4.1.3), (TCFR)(3.2.12) must have this order, and the rules (MVC) and (NRVH) must be in this order. The fact that (RVS) precedes (TCFR) is clear as it has already been mentioned (see 4.8). But if after (RVS), instead of (P-Ass), the rule (TCFR) applies, the resultant [ǰ] will not be the segment which according to (P-Ass) should motivate vowel fronting. In the case of the order of (MVC)(4.7.1), (NRVH)(4.1.2) as such, too, it can be observed that (NRVH) cannot apply before (MVC) because /e/ does not have a back counterpart in Azerbaijani vowel system. Hence, first (MVC) lowers it to [æ] and then (NRVH) backs it to [a].

	/k	ā	r	#	x	ā	n	e/
1)	(RVS)	(NFVS)				(NFVS)		(MVC)
	ḱ	a				a		æ
2)		(P-Ass)						(NRVH)
		æ						a
3)	(TCFR)							
	ǰ							

Notes

[1]As already mentioned (Chapter 3, note 8), we have not employed the theory of markedness. This, however, does not oblige us to disregard the support markedness can lend to our description.

[2]The label 'presumptive past' is adopted from Kazmaoğlu (1974:40-1).

[3]The rule of Devoicing in its general form, i.e., as:

$$c \rightarrow [\text{-vce}]/cvcv - \begin{Bmatrix} C \\ \# \end{Bmatrix}$$ seems to be applicable with respect to [ǵ] in

Goychay dialect, and to /g/ in the affected literary pronunciation, as in the following derivations:

	'pretty'	'while counting'	'no'
	/gæšæng/	/saj+ar+ag/	/jog/
	[-RVS]		
(RVS)(3.2.11)	ǵ		
(Son Del)(4.3.1)	∅		
(General Devoicing)	ḱ	k	k
	[gæšæḱ]	[sajarak]	[jok]

The pronunciation [gæšæḱ] is taken from Shiräliyev (1967:377), and [sajarak] and [jok] from the declamation of a recent sonnet called 'Behjät äbad Khätiräsi' by the Poet of Heydär Babaya Salam.

[4]E.g., the word for 'milk' is süd in Kitab-i Dadam Gorgud. . . p. 29 Dresden copy in Ergin 1963. In an earlier record (Kashghari, I, 157-7) this word is süt which Emre (1949:61) interprets as [süt] (for the significance of this interpretation see Chapter 3, note 16). To see the point we need to consider the following:

1) In Tabriz and the literary dialect we have monosyllabic words with final voiced stops, e.g., [ad] 'name', [gab] 'dish'. These words contrast against [at] 'horse' and [gap] 'snatch'.

2) On the other hand, the words for 'milk' and 'fire' differ with respect to the final stop in Tabriz from the literary dialect. In Tabriz we have [süt] 'milk' and [ot] 'fire' whereas in the literary dialect we have [süd] and [od].

3) We have not found any reason for positing /süt/ and /ot/ for Tabriz and /süd/ and /od/ for the literary dialect.

4) In pre-11th century documents these words are s̄üt and ōt.

5) Hence, the Tabriz [süt], [ot] and the literary [süd], [od] have a common underlying form.

6) Even the orthography of the later works such as the Book of Dādā Gorgud seems to indicate that the underlying forms for the words 'milk' and 'fire' in earlier times must have been /süd/ and /od/.

7) With regard to all these points it is puzzling that Tabriz has [süt] and [ot] whereas the literary dialect has [süd] and [od].

8) Hence, this is a case of unpredictable devoicing in Tabriz.

9) Since the early (e.g., 11th century) forms were süt and ōt, we might think that Tabriz has shortened the long vowel and inherited the voiceless stops in these words. But this is not plausible. Could it be that the following operations which give [ad], [gab] in Tabriz and the literary dialect, and [süd], [od] in the literary dialect has been avoided by Tabriz?

$$
\begin{pmatrix}
c \rightarrow [+\text{vce}]/ \ \bar{v} - \\
\hspace{2.2em} c \\
\bar{v} \rightarrow v \ /- [+\text{vce}]
\end{pmatrix}
$$

[5]This is the same process as the process of vowel nasalization in Portugese discussed by Saciuk (1970:198).

[6]For a discussion of the sequential and simultaneous ordering of phonological rules see Koutsoudas et al. 1974, and King 1973.

CHAPTER V

NATIVIZATION IN AZERBAIJANI

5.1. We conceive of nativization[1] as the linguistically significant
change which allows a morpheme or word from one language to be incon-
spicuously used in a speech style of another language. The key point
is the inconspicuous occurrence of the loanword in a speech style of the
borrowing language. Since styles of pronunciation differ according to
their distance from the underlying representations (the formal style
with a minimum and the informal style, almost always, with a maximum
distance from the underlying representation (see 1.17-18)), and since,
as we see it, nativization is the inconspicuous occurrence of a form
from one language in a speech style of another language, in other words,
since loanwords can inconspicuously appear in different speech styles of
the borrowing language, the change which causes nativization may range
between a minimum (the substitution of a foreign segment with its
closest approximation available in the native inventory of the under-
lying segments) and a maximum (with several rules applicable in its
derivation).

Thus, when a loanword is inconspicuously used in a speech style
of another language it is nativized (regardless of the style in which
it appears). Note that at this point only the general concept of
nativization is at issue. Once a word is nativized (by being incon-
spicuously employed in a speech style of a borrowing language), then

its degree of nativization can be considered, because in harmony with the
speech style in which it occurs, the nativized loanword may be minimally
or maximally distant from its underlying representation in the borrowing
language.

To illustrate the above points we may consider the word for
'orchestra' which is [ork̂estr] in the formal style of Tabriz speech. In
the derivation of this pronunciation the native /k/ >[k̇]> [k̂] apart,
the only significant change is the substitution of the rolled French [R]
with the positional variants of the Azerbaijani underlying /r/. Note
that in this pronunciation the normally unpermitted noninitial-syllable
mid vowel and the three-consonant final cluster remain intact.

In contrast to the formal pronunciation [ork̂estr], consider the
informal pronunciation [örk̂æz] whose derivation from the French word
<u>orchestre</u> 'orchestra' reflects the application of not only the rules
employed in the derivation of the formal [ork̂estr], but also the applica-
tion of the rules of mid vowel change (4.7.1), nativization root vowel
harmony (4.1.2), final cluster simplification (which going far beyond
our rule of stop deletion (4.3.2.1) has deleted two consonants (i.e.,
/tr/) at one stroke), and the voicing of final /s/ (4.7.11). Note that
the rules of mid vowel change and final [s] voicing belong to the category
of the rules of nativization. These rules differ from the common rules
of Azerbaijani phonology in that whereas the former apply only to loans,
the latter apply to all the morphemes with a structural description for
them. In the derivations of the pronunciations for the word for 'orchestra',
below, all the three kinds of the rules in Azerbaijani phonology (i.e.,
the rules of substitution, the specific rules of nativization and the
general rules) are represented:

	/orkestr/	/orkestr/
(RVS)(3.2.11)	k´	k´
(TCFR)(3.2.12)	ĵ	ĵ
(NRVH)(4.1.2)		ö
(MVC)(4.7.1)		æ
final cluster simplification		∅∅
(FSV)(4.7.11)		z
	[orĵestr]	[örĵæz]
	(formal)	(informal)

For some speakers the normal pronunciation of the word for 'orchestra'
is identical with the formal [orĵestr]. For other speakers it may be
[orĵes] ~ [örĵes] or [orĵestir] ~ [örĵestir], by the following derivations.
There must be finer stylistic or idiolectal reasons for the nonapplica-
tion of some of the rules.

	/orkestr/	/orkestr/	/orkestr/	/orkestr/
(RVS)(3.2.11)	k´	k´	k´	k´
(TCFR)(3.2.12)	ĵ	ĵ	ĵ	ĵ
(NRVH)(4.1.2)	ö	ö		
final cluster simplification	∅∅		∅∅	
(i-ep)(4.7.6)		i		i
	[örĵes]	[örĵestir]	[orĵes]	[orĵestir]

5.2. The rules of substitution in comparison with the general
rules of Azerbaijani phonology and the nativization rules have a note-
worthy characteristic. Whereas the other two kinds of rules apply to
specific segments present in their underlying representation in Azerbai-
jani, the rules of substitution apply to foreign segments to make them
acceptable in the underlying representation. Thus, these rules 'interpret'
or 'transphonate' the foreign segment into the nearest segment in the

inventory of underlying segments in Azerbaijani. An example of the rules of substitution is the already mentioned (5.1) rule that substitutes the French uvular trill [R] with the phonetic variants of Azerbaijani /r/.

Some of the rules of substitution have already been introduced (see 3.4.3, 3.4.7-2, 3.4.8), and the following are the remaining most important ones known to us at this time:

5.3. The Arabic short /i/ and /u/ are similar to the Azerbaijani /i/ and /u/, but the Arabic short /á/ is realized as the Azerbaijani /æ/, e.g., [ism]</ism/<Arabic ʔism 'name', [xums]</xums/<Arabic khums 'one-fifth', but [gælæm]</gælæm/<Arabic qalam 'pen'. The correspondence between the Arabic and Azerbaijani /i u/ can also be seen in that, when shortened by the relevant rules (see 3.11.3.3 - 3.11.3.4), the long Arabic [ī ū] correspond to the Azerbaijani /i u/, but the shortened Arabic [ā] rather than corresponding to the Azerbaijani /æ/ (as the short Arabic /á/ does), corresponds to Azerbaijani /a/, e.g., [musa]</mūsā/< Arabic mūsá 'Moses', [isa]</īsā/ Arabic ʕīsá 'Jesus', [kæmal]</kæmal/ <Arabic kamál 'perfection'. The existence of the prelexical rules that convert the Arabic /á/ and [ā] to Azerbaijani /æ/ and /ā/ does not mean that the underlying vowels in words like /mūsā/, /īsā/ are shortened prelexically. Rather, it means that the Azerbaijani underlying /mūsā/, /īsā/ etc. are derived from the Arabic mūsá, ʕīsá etc. We have vowel shortening rules to shorten the vowels in the Azerbaijani /mūsā/, /īsā/ etc..

The difference between the Arabic /á/ and the Azerbaijani /a/ arises from the fact that whereas the Arabic vowel system has two degrees of aperture (Cantineau, 1960:90), the Azerbaijani vowel system has three degrees of aperture. Consequently, whereas the /i u/ of the Arabic and

Azerbaijani systems correspond in height, the Arabic /ā/ does not correspond to the Azerbaijani /a/.

5.4. The French nasal vowels are substituted with their corresponding vowel and nasal sequences, e.g., [kuran] French [kurã] <u>courant</u> 'current, draught'.

5.5. The French uvular trill /R/ is substituted by the Azerbaijani /r/.

5.6. The unstressed final [a] of Russian loans is prelexically deleted, e.g., [gazet]< /gazet/< Russian <u>gazéta</u> 'newspaper'.

5.7. In addition to /g/< Arabic voiceless uvular stop /q/ (i.e.,ق) (see 3.4.7) and /ʔ/< Arabic voiced pharyngeal fricative /ʕ/ (i.e.,ع) (see 3.4.8), we find the following rules of consonant substitution changing the Arabic consonants to their Azerbaijani corresponding segments:

5.8. The Arabic emphatic (i.e., velarized) voiceless dental stop and alveolar fricative segments /ṭ ṣ/ (i.e.ط ص) become the Azerbaijani voiceless dental stop and alveolar fricative /t s/.

5.9. The Arabic emphatic (i.e., velarized) voiced dental stop and fricative segments /ḍ dh/ (i.e.ظ ض) and the voiced interdental fricative /ð/ (i.e.,ذ) becomes the Azerbaijani /z/.

5.10. The Arabic voiceless interdental /θ/ (i.e.,ث) becomes the Azerbaijani /s/.

5.11. The Arabic voiceless pharyngeal fricative /ḥ/ (i.e.,ح) becomes the Azerbaijani voiceless glottal fricative /h/.

5.12. The Arabic round glide /w/ (i.e.,و) becomes the Azerbaijani /v/.

5.13. The voiceless velar stop in earlier loans, mostly from

Russian, is realized as the voiced velar stop, e.g. [gurušga] < /grusga/<
Russian <u>kružka</u> 'mug', [gænow] < /ganav/< Russian <u>kanava</u> 'ditch, gutter'.
Since in such words the [g] apparently does not alternate with [k], i.e.,
since in all styles the words for 'mug' and 'ditch' are pronounced
[gurušga] and [gænow] ([ganov] in Northern literary dialect), it can be
assumed that the voiceless velar stop of the Russian <u>kružka</u> and <u>kanava</u>
has been restructured into the Azerbaijani voiced velar stop. This means
that regardless of the voiceless velar stop in such words in the source
language, their underlying representations in Azerbaijani will have the
voiced velar stop. While this is true for many words, for a smaller
number of loans like the informal [g(ɨ)las] and normal and formal [k(ɨ)las]
< French <u>classe</u> 'classroom', depending on the speaker there will be two
underlying forms /glas/ and /klas/. The latter, more properly will be
/klas/.
[-RVS]

      The list of the rules of substitution is, apparently, an accumulating
one because upon borrowing a morpheme with a segment for which Azerbaijani
may not have a counterpart in the inventory of the underlying segments
there will be rules to substitute the unfamiliar segment with an approxi-
mation available in the inventory of the underlying segments.

      5.14. To return to the styles of pronunciation, although we have
spoken of three styles (formal, normal, informal), within the scope of
the three styles known to us, there must be substyles with finer dis-
tinctions which careful study can specify.

      It is noteworthy that the degree of the nativization of a loanword
and its assignment to a speech style is in almost direct relationship
with the number of the rules involved in its derivation. This is evident
from the derivation of the different pronunciations of the word for

'orchestra'. The pronunciation belonging to the formal style has been
derived by three rules (i.e., the prelexical substitution rule that
replaces the French uvular trill [R] with the phonetic variants of the
Azerbaijani /r/, the rule of the realization of the velar stop (3.2.11)
which specifies the backness of the underlying /k/, and the Tabriz context
free rule (3.2.12) which changes the voiceless palatal stop resulting
from the (RVS) to the voiceless alveopalatal retroflex affricate; the
normal style has been derived by four or five rules (i.e., in addition
to the rules involved in the derivation of the formal style, the rule of
vowel harmony has fronted the back mid round /o/ to [ö], and a rule of
cluster simplification has simplified the final consonant cluster either
by deletion or by i-epenthesis); the informal style has been derived by
seven rules (i.e., in addition to the three rules involved in the deriva-
tion of the formal style, and the rules of vowel harmony and cluster
simplification involved in the derivation of the normal style, also the
rule of mid vowel change has lowered the /e/ to [æ], and the rule of
final /s/ voicing has voiced to [z] the final /s/ resulting from the
cluster simplification).

    5.15. Another example which shows an almost direct relationship
between the degree of nativization and the number of the rules involved
in the derivation can be seen in the three different pronunciations of
the word for 'hour, timepiece' in the following derivations:

	/sā?æt/	/sā?æt/	/sā?æt/
(NFVS)(3.11.3.3)	—	a	a
(NRVH)(4.1.2)	—	a	a
(Glt wk)(4.7.4)(1)	—	h	h
(2)	—	∅	—
	[sā?æt]	[saat]	[sahat]
	(formal)	(normal)	(informal)

As it can be seen in the above derivations of the Azerbaijani pro-
nunciations of the word for 'hour, timepiece'< Arabic sā§at, there is
almost a direct relationship between the degree of nativization and the
number of the rules involved. From among the three nativized pronunciations
of this word the formal has been derived only by three rules belonging to
the category of the prelexical substitution rules that substitute the
Azerbaijani /a ʔ æ/ for the Arabic /ā̆ ʕ ā̆/; the normal pronunciation
has been derived by seven rules (i.e., in addition to the three substitu-
tion rules involved in the derivation of the formal pronunciation, the
rule of vowel shortening has shortened the /ā/ to [a], the rule of root
vowel harmony has changed the low front /æ/ to the low back [a], and
the rule of glottal weakening in second application has deleted the
weakened glottal segment); and the informal pronunciation has been derived
by six rules (i.e., by the three prelexical substitution rules, the rule
of vowel shortening, the rule of root vowel harmony, and one application
of the rule of glottal weakening).

5.16. The final example illustrating the relationship between the
degree of nativization (reflected in the style of pronunciation) and the
number of the rules involved in the derivations, from among many interesting
examples can be the derivation of the word for 'comfortable' from the
Arabic rāḫat:

	/rāhæt/	/rāhæt/	/rāhæt/	/rāhæt/
(NFVS)(3.11.3.3)	—	a	a	a
(NRVH)(4.1.2)	—	a	a	a
(Glt wk)(4.7.4)	—	—	∅	—
(n-ep & V)(4.7.9)	—	—	—	nd
	[raha t] (formal)	[rahat] (normal)	[raat] (informal)	[rahand]

In these derivations, the formal pronunciation [rāhæt] has under-
gone a block of three rules which has substituted the Arabic /ấ ḥ ấ/ with
the Azerbaijani /ā h æ/; the normal pronunciation has undergone five
rules (i.e., the substitution rules employed in the derivation of the
formal pronunciation, the rule of vowel shortening which has shortened
/ā/ to [a], and the rule of root vowel harmony which has changed the /æ/
to the [a]); and the two informal pronunciations have undergone six rules
(i.e., in addition to the three substitution rules, the vowel shortening
and the vowel harmony employed in the derivation of the normal pronunciation,
also either the rule of glottal weakening or n-epenthesis and final voicing).

5.17. Revealing examples of the nativization of loanwords in
Azerbaijani seem almost inexhaustible. This can be inferred from the
variety of the rules (presented in Chapter 4) that apply specifically to
loanwords. Nevertheless, despite the great variety in the form of the
nativized words, nativization seems to be sketchable in terms of the
varieties of the rules involved.

5.18. As the examples presented in the preceding paragraphs suggest,
nativization in Azerbaijani is achieved by three kinds of rules: (1)
the prelexical rules of substitution (when the loan has segments signifi-
cantly different from the corresponding segments in the Azerbaijani
inventory of underlying segments), (2) the specific nativization rules,
and (3) the general rules of Azerbaijani phonology. The nativization
rules and the general rules apply to the underlying forms.

5.19. At the conclusion of this chapter it seems proper to say a
word about another aspect of nativization -- the conformity of the
borrowing language to a source language. Although nativization is
largely the conformity of the loanwords to the sound system of the

borrowing language, it seems that in the process of historical development, at the same time that a language nativizes many loans, it itself is affected by loans. In phonology, among examples illustrating the conformity of the borrowing language to a source language, one is the adoption of underlying segments that fill holes in the inventory of the underlying segments of the borrowing language. Azerbaijani has gained some segments in this way, the most recent ones being the initial /ž/ and the voiceless velar stop /k/, as in [žurnal]</žurnal/< French journal 'journal' and [k(ɨ)las]</klas/< French classe 'classroom'.

Notes

We have examined only two works on nativization: (1) Saciuk (1969), (2) Nessly (1971).

1) Saciuk (1969) shows that the formatives of a language, on the basis of their underlying forms and the phonological rules applicable to them may belong to the native ([+Native]) or nonnative ([-Native]) categories. [+Native] and [-Native] formatives differ in that the [+Native] formatives are derived from the underlying forms by rules which apply to the great majority of the formatives of a language, whereas the [-Native] do not undergo all the applicable [+Native] rules, and undergo other ([-Native]) rules. The [+Native] and [-Native] formatives, however, share similarities, e.g., in underlying segment or segment sequences, and thus are opposed to yet another category of formatives which usually have different underlying segments and strings, and obey no [+Native] or [-Native] rules. These formatives belong to the [-Homogeneous] category, whereas the [+Native] and [-Native] formatives belong to the [+Homogeneous] category. Further, in addition to the primary stratal features, i.e., [Native] and [Homogeneous], there are secondary features which further specify the members of the [-Native] category. Finally, the primary stratal features differ from the secondary stratal features in that the former are interpreted by universal stratal marking conventions whereas the secondary stratal features are not.

The comprehensiveness of Professor Saciuk's theory of nativization with respect to its capacity to account for all possible shades of nativization is missing in our simpler account of nativization. We were constrained with the lack of resources such as access to speakers of different styles of Azerbaijani, relevant literature, etymological dictionaries, and previous studies on nativization in Azerbaijani (if there are any).

2) Nessly (1971) employs a theory of nativization similar to Saciuk (1969). Acknowledging Saciuk's precedence in the treatment of different surface realizations of a word, he focuses on the classification of the vowels used in English in accordance with their distance from the native English vowel qualities.

CHAPTER VI

CONCLUSION

The preceding chapters constitute an attempt to present a generative phonology of the Tabriz dialect of Azerbaijani.

The first chapter introduces Azerbaijani as a Turkic language. It places Azerbaijani in a rough sketch among Turkic languages, and after a brief reference to the literary dialect of Northern Azerbaijan, and a short discussion of the styles of speech, the chapter suggests that the Tabriz dialect is not the literary dialect of Southern Azerbaijan.

The second chapter is a critical examination of six previous works on Azerbaijani phonology. Out of the six works, except for one work sampling different Azerbaijani dialects, five describe a particular dialect -- the literary dialect of the Northern Azerbaijani or the Tabriz dialect. The examination of these works results in the formulation of some of the rules of Azerbaijani phonology such as the rules of the creation of the long vowels, diphthongization, and vowel sequences. Questions arising about the status of some segments, i.e., the [+high] stops and affricates leads to a somewhat different analysis of these segments in Chapter 3.

The third chapter posits the Azerbaijani underlying segments which do not greatly differ from the traditional phonemic inventory of Azerbaijani. The difference is in that here only two velar underlying stops, rather than two palatal and two velar stop phonemes, are posited. It is argued that the pair of the velar stops /k g/ suffice for the

derivation also of the palatal stops in Azerbaijani. It is also shown
that the dental affricates [c ʒ] in some Azerbaijani dialects including
the Tabriz dialect and the alveopalatal affricates [č ǰ] in some other
dialects of Azerbaijani, including the Baku dialect, come from the same
underlying segments /č ǰ/. Furthermore, it is shown that, despite the
view expressed in some of the examined works to the effect that [x́] is
not related to [ḱ], the voiceless palatal fricative is a realization
of the voiceless palatal stop [ḱ]. Concerning vowels, it is pointed out
that in addition to the nine ordinary vowels /i ü ɨ u e ö o æ a/, their
long counterparts, too, need to be posited as underlying segments.
Finally, in this chapter, too, occasions arise for the formulation of a
few other rules of Azerbaijani phonology, e.g., the Tabriz context free
rule which accounts for the realization of the high stops and affricates
in Tabriz speech, the stop spirantization, glide insertion, glide
formation and vowel shortening, unrounding, fronting.

The fourth chapter presents perhaps the majority (but not all) of
the important phonological rules accounting for the pronunciation of the
Tabriz speech. Some of these rules, e.g., the rule of vowel harmony
which accounts for both the backness and roundness in suffixes, the rule
of vowel harmony accounting for backness and roundness harmony in loan
roots, the rules of voicing dissimilation, mid vowel change, vowel
raising, [j]-rounding, [n]-epenthesis, etc., are apparently presented
for the first time. Other rules which are also described in the works
on Azerbaijani phonology, in this chapter, are formulated on the basis
of their motivation rather than the convenience of the pattern of exposi-
tion. E.g., instead of treating spirantization for each of the segments
/č ǰ g/ separately and under separate entries for their word-medial and

word-final occurrences (as it is in the traditional descriptions), here there is a general rule of high consonant spirantization which accounts for the spirantization of not only /č ǰ g/, but also the palatal [ḱ ǵ], in the relevant environments. In the light of further investigations, this chapter can be extended to include other rules which we had to disregard at this time because of insufficient examples to support them. The rules presented in chapters two and three added to those in this chapter seem to include the basic rules of Azerbaijani phonology.

The fifth chapter sketches nativization in Azerbaijani. It views nativization as the inconspicuous occurrence of a loanword in a speech style of a borrowing language. It is suggested that in nativization in addition to the general rules of Azerbaijani phonology and the nativization rules already discussed mostly in chapter 4, there are involved also rules that replace the difficult foreign segments with native approximations. Most of these rules of substitution appear in this chapter. Here, it is also argued that there is almost always a direct relationship between the degree of nativization and the number of the rules involved in the derivation of a nativized loan. Finally, it is suggested that nativization affects also the borrowing language.

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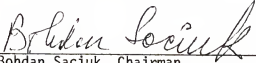
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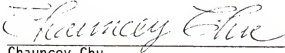
BIOGRAPHICAL SKETCH

Born in 1935, Hosseingholi Salimi received the first four years of his elementary school education in his birthplace -- Tabriz. He completed his elementary education through college in Tehran, where he was granted a Licentiate Degree in English at Tehran University in 1960. During 1957-60 he served as a teacher at elementary schools in Tabriz (1957-58 while attending Tabriz University) and in Tehran (1958-60 while studying at Tehran University). Also he taught English in Tehran secondary schools (1960-67 while attending English classes and seminars for teachers of English held by the British Council and Iran-America Society in collaboration with the Ministry of Education). Through a Fulbright scholarship he attended the 1964 Summer School for Teachers of English as a Foreign Language at the Institute of Languages and Linguistics, Georgetown University. After receiving an M.A. in English from Atlanta University in 1972, he entered The Program in Linguistics at the University of Florida.
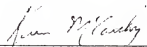
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Bohdan Saciuk, Chairman
Associate Professor of Spanish
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This dissertation was submitted to the Graduate Faculty of the Program in Linguistics in the College of Arts and Sciences and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

August, 1976

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